REPORT RESUMES

ED 003 735 64

FACTORS CONTRIBUTING TO FACULTY AND STUDENT ACCEPTANCE OF INSTRUCTIONAL TELEVISION, TEMP I.

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REPORT NUMBER NDEA-VIIB-058-B-1 PUB DATE 64

EDRS PRICE MF-$0.45 HC-$13.08 327P.

DESCRIPTORS- COLLEGE STUDENTS, TEACHERS, *ATTITUDES, *CLOSED CIRCUIT TELEVISION, *EDUCATIONAL TELEVISION, INSTRUCTIONAL INNOVATION, AUSTIN, TEXAS, TEXAS EDUCATIONAL MICROWAVE PROJECT (TEMP)

THIS STUDY WAS DESIGNED AND EXECUTED FOR THE PURPOSE OF DISCOVERING AND DELINEATING FACTORS IN THE ACCEPTANCE OR REJECTION OF TELEVISED INSTRUCTION IN THE 11 COLLEGES AND UNIVERSITIES PARTICIPATING IN THE TEXAS EDUCATIONAL MICROWAVE PROJECT (TEMP). PROCEDURES INVOLVED (1) INTERVIEWS WITH ADMINISTRATORS, TELEVISION INSTRUCTORS, AND MONITORING INSTRUCTORS, (2) TEACHER QUESTIONNAIRES, (3) RESEARCH ON MATCHED TV AND NON-TV GROUPS, (4) AN ALL-NETWORK STUDENT QUESTIONNAIRE, (5) A STUDY OF THE EFFECT OF EXPOSURE TO TV ON ATTITUDES TOWARD THE MEDIUM, (6) A TECHNIQUE TO MEASURE LEARNING, AND (7) AN "OPENNESS TO EXPERIENCE" MEASURE. THE STRATEGY OF THE PROJECT WAS ONE OF CASE STUDY. THE PRINCIPAL INVESTIGATOR PRESENTED TWO CONCLUSIONS--(1) BETTER WAYS MUST BE FOUND FOR DEFINING AND MEASURING WHAT SHOULD BE CHANGED THROUGH EDUCATION, (2) PRODUCTIVE RESEARCH IN EDUCATION NEEDS TO FOCUS ON THOSE GENERAL TRAITS OF THE WHOLE INDIVIDUAL THAT CAN BE DEFINED AND MEASURED, AND THAT HAVE A BEARING ON THE GENERAL INTELLECTUAL FUNCTIONING OF THE INDIVIDUAL. OTHER REPORTS IN THIS SERIES ARE ED 003 734 THROUGH ED 003 737. (JC)

B-058b1

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FACTORS CONTRIBUTING TO FACULTY AND STUDENT ACCEPTANCE OF INSTRUCTIONAL TELEVISION

(A research project of the Texas Educational Microwave Project)

TEMP — PART III

Fillmore H. Sanford
Senior Investigator

ED003735

PREFACE

In early February, 1962, the Texas Educational Microwave Project (TEMP) initiated, with the support of

a program of research designed to assess some of the factors contributing to the success of the novel inter-institutional venture earlier iniated in elevan colleges and universities in the Central Texas area. The present document is the report of that research porject.

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INTRODUCTION

I. Scope and Purpose of the Present Study.

A. General Focus: A Study of Acceptance.

The present study was designed and executed for the purpose of discovering and delineating significant factors in the acceptance or rejection of televised instruction in the institutions participating in the TEMP adventure.

1. Institutional Factors in Acceptance.

It was anticipated that there would be appreciable differences among the various institutions with respect to the general enthusiasm with which this innovation would be received, and that a research exploration into these differences might lead to the formulation of presently tenable and eventually testable hypotheses of relevance to the questions (1) what kinds of educational institutions are most receptive to instructional television, and (2) what institutional factors are related to the willingness to accept televised instruction and to the tendency to perceive it as useful. In the literature there is little or no research bearing on such institutional factors in orientation to instructional TV. (In actuality, the present study succeeded only in demonstrating the existence of institutional differences. Little progress, if any, was made toward a delineation of institutional variables involved in these differences.)

2. Faculty Acceptance.

A second expectation was that faculty members would show wide individual differences in both the strength and quality of attitudes toward television instruction and that such differences in attitude might be accounted for either in terms of personal attributes of the teacher or in terms of delineable aspects of the teacher's role and situation in the professional setting.

There is, as we shall see, ample evidence to show that teachers do indeed differ widely in their degree of acceptance of instructional TV. And the accumulated evidence shows the prevalence of much more negative than positive feeling for televised procedures. There have been, however, relatively few attempts to study the social or psychological factors related to, or determinative of, faculty attitudes toward instruction by television. In probing such matters, the present study was designed to act on the feeling that faculty attitudes must be studied in depth and understood fully if there are to be successful attempts to have this new instructional procedure assessed on its own merits. Further, we must have such an understanding of attitudes and their roots if television procedures are to be not only adopted where they seem desirably but adapted, where necessary and desirable, to the needs, aspirations and strongly held convictions of college teachers.

3. Student Acceptance.

A third expection, and one supported by previously available evidence, was that individual students would differ widely in the degree of acceptance both of the idea and of the actuality of instructional television. And it was also a guiding expectation that the attitudes of students are meaningfully related to the motives, needs, aspirations and traits of students. As we shall see, the literature furnishes very little evidence on this particular point. However, recent explorations into the matter of personality development in the college years has yielded a convincing array of indications that the whole person does indeed go to college and that the whole person, as a student, functions and grows in desirable or undesirable ways in accordance with his orientations to his teachers, to his environment, and to his peers. There is further reason to believe that the student's change in the direction desired by most educators will be influenced by his traits and expectations as they bear not only on conventional forms of instruction but also on the specific matter of instructional TV. A guiding assumption in the present study then has been that we need to understand not only the strength of the students' positive and negative feelings about televised instruction, but we need to know also the quality and form of these feelings; we need to know for what reason he likes or dislikes televised instruction and we need to know the kinds of relationships he can and does establish with it, relationships that seem more or less conducive to his educational and personal development.

4. The Educational Effectiveness of Instructional TV.

The present study will not concern itself directly, except in some minor ways, with the question of the educational effectiveness of instructional TV. On the basis of evidence in the literature, evidence spelled out in some detail later in the present report, the obvious and easily documented stand is that there is no longer room, given available ways of measuring the effectiveness of any mode of instruction, to maintain that instructional television is less effective than other educational procedures. Certainly it is now impossible to maintain, in the basis of evidence coming from a multitude of sources, that through any known procedure for measuring educational effectiveness, televised instruction differs significantly from conventional instruction given in large classrooms. There is conflicting evidence about the comparison of televised instruction with instruction in small classes of a seminar type, and data bearing on these comparisons will be dealt with later. For the present study, however, there seemed to be no point in investing any of the limited time and resources available in the bringing of additional coal to this particular Newcastle.

The project did include, however, some tentative explorations into new and potentially productive procedures for assessing the outcomes of experiences alleged to be educative in nature.

B. Procedures and Sub-Projects of the Present Study.

From its beginning to its end, the present project consisted of a number of separable but interwoven attempts to get at the various factors in acceptance or rejection of televised instruction. These procedures, which may occasionally be described also in terms of sub-projects, were as follows:

1. Interviews with administrators. At least one member of the research staff interviewed at least once the administrator primarily responsible on each campus for the local television project. These interviews were conducted during the spring after the first full semester of TEMP operations. They were not highly structured, but there was an attempt to ask equivalent questions of each administrator in order to have each one of them converse in approximately the same general realm of discourse. With a sample of only eleven institutions, there seemed not much hope of making any quantitative statements about the results of the interviews. However, these interviews will be a source, although necessarily an untrustworthy and nondefinitive one, of data about certain institutional factors as they bear on institutional acceptance of TV.

2. Interviews with TV instructors. There were interviews with approximately half of the instructors who actually presented televised courses over the network. There were also interviews with instructors from other institutions, not in the TEMP area, who have had extensive experiences in giving televised courses. Again, these interviews were

were not highly structured but did succeed in getting expression from the various instructors on relatively comparable questions. The interviews, however, cannot be used except to lend flavor, to serve as a basis for insights into gross advantages and disadvantages, actual and potential difficulties or actual and potential gains.

3. Interviews with local monitoring instructors. Over the period of the full academic year of 61-62, members of the project staff interviewed local instructors on each of the participating campuses. Again these interviews could not be systematically structured nor used as the basis for comparable data from the instructors. Sometimes it was necessary to conduct the interviews in a group setting, or for the interviewer simply to take notes during the local meetings dealing with the television project. These group interviews and group "listening sessions" were supplemented by a number of interviews with the individual instructors on the local campuses.

4. Teacher questionnaires. One major purpose of interviewing teachers was to gain enough insight into relevant questions in order to construct a paper and pencil instrument to be distributed to all local monitoring teachers. Such a questionnaire was constructed and was administered at the end of the first full semester of TEMP operations. The results from this questionnaire will be presented in some detail, and the discussion of the results will be supplemented by information coming from the assorted interviews with teaching personnel.

5. Research on Matched TV and Non-TV groups at the University of Texas. Because the project was headquartered at the University of Texas and its director had the opportunity to arrange a teaching schedule

so that he could teach a face-to-face group of students at the same hour and as much as possible in the same manner as he was teaching another group of students in another building through pre-recorded videotapes, there was a concentration in the spring of 1961 on gathering from University of Texas students data that would (a) be useful in and of themselves in telling us something about the factors involved in student acceptance of the medium and (b) lead to the formulation of a questionnaire instrument that could be distributed to all students around the network.

6. The all-network student questionnaire. At the end of the first full semester of TEMP operation, questionnaires were distributed to every instructor on the network with the request that he have his students, during the last week of the course, complete the questionnaires and return them to the research office. A total of 1845 such questionnaires were returned and have been subjected to fairly extensive analysis. These results yield evidence concerning such matters as the general level of acceptance of ITV from among students at the various institutions, the relative acceptance of ITV as it varies from one course to another, and will have a bearing on questions concerning personality traits and other attributes of students as these bear on attitude toward television.

7. The effect of exposure to TV on attitudes toward it. In the spring of 1961 a separate study was run on psychology students at the University of Texas in which a number of students who had heard the psychology teacher lecture on a given subject in the morning were asked to volunteer to see a television program on the same subject in the evening. Two groups of such students were employed for two different

topics, each of which was covered both in lecture and over TV. Before seeing the TV program, the students were asked to fill out a very elaborate form designed to assess their feelings about the general educational quality of televised instruction. After seeing the televised program, they completed the same form. The data bear on the question of the effects of actual experience with television on attitudes toward it and will give supplementary information about the perceived general strengths and weaknesses of televised instruction.

8. The study of the semantic differential technique as a potential measure of learning. In the spring of 1962 at the University of Texas a large class of students were administered an adaptation of the Osgood Semantic Differential Form dealing with the meaning of concepts that would come up in the section of the course devoted to the study of personality. The plan was to examine the likelihood that actual exposure to the scientific study of personality would change the general meaning of some of the key concepts in this area. The purpose of this study was simply to see whether or not the semantic differential technique, or some adaptation of it, might yield results on the effects of education that are more subtle and just as meaningful as the results yielded by the conventionally employed tests of achievement. (These results have not been fully analyzed.)

9. The "openness to experience" scale and attitudes toward television. During the spring and summer of 1961 at the University of Texas a student who was working in collaboration with the research staff with the TEMP project administered a questionnaire to several hundred undergraduate students, a questionnaire dealing with what seems appropriately

called "openness to new experience"; he related scores on this scale (a) to attitudes about televised instruction and (b) to expressed willingness to take televised courses. These results yield additional data about personal attributes of the student as these relate to his feelings toward being instructed by television.

C. General Research Strategy.

From the outset, the present research project was conceived as one that could make its best contribution not by the testing of precisely stated hypotheses but by the *finding* of hypotheses that may deserve the kind of thoughtful and precise examination which modern research techniques can give them. When there were only 11 institutions involved in TEMP and a total of only 63 instructors intimately connected with the project, one immediately settles for only a dim hope of finding statistical relationships both of psychological and of statistical significance. So the strategy moves toward that of the case study rather than that of psychometrics. Through all the interviews there was little attempt to secure data that would lead to the stating of statistically precise relationships; the aim instead was to seek for trends, for meaning, for understanding, with the hope that such seeking would lead to the phrasing of significant hypotheses amenable to later and properly precise tests. The returned questionnaires from faculty members did allow some statistical analysis, of course. And obviously the returns from the large number of students enrolled in TV courses allowed statistical analyses. In the light of past research on ITV, however, it was felt from the beginning that the greatest contribution of the present project, given its time and resources, could be achieved through the seeking of, and hopefully, the finding, of some of the more subtle human and qualitative relationships involved in the orientation to and the learning from this pedagogical innovation. And the attempt throughout was also characterized by the desire to relate both the faculty and student orientations to ITV to the general situation in which students and faculty members find themselves in modern institutions of higher learning.

In its general approach to the over-all problem of faculty and student reaction to instructional TV, the present project found itself intimately concerned with what might be described as dimensions of the teacher-student relationship. The general feeling gradually came to be an explicit one that there needs to be a definition and understanding of the kinds of actual teacher-student relationships that do exist in institutions of higher learning, and an equally clear understanding of the kinds of relationships that both students and teachers desire, if we are to understand either the emotional investment in present modes of teacher-student relationships or if we are to understand the reaction to any suggested change in prevailing relationships. Also, throughout the project, there was concern for the very general and as yet undefined phenomenon of reaction to technological change. In an age in which technological advancement comes at an exponential rate, it is quite important that this society learn to handle the human side of technological change. Many changes, though desirable in terms of the general values of the society, will be bitterly resisted because they fall across established attitudes and habits. If there can be a learning of ways in which to engineer or to plan or to persuade for change in attitudes toward educational television, then this can be a finding of general value for the society.

As is the case with any other intricate and involved project, this project, now that it is completed, is ready to be begun. Actually, the project was mounted in a great hurry and without the kind of careful planning one would like the opportunity for. It had to be gotten on the road in a hurry if it was to catch students at the beginning of their experience with the TEMP operation. The project and its findings will show the deleterious effects of too rapid and too incomplete a planning period. Also, other exigencies of timing and staffing have a deleterious effect on the general quality and utility of the report. These need not be described in detail, however much one may desire to cite all possible mitigating circumstances.

II.A. Educational Effectiveness of ITV and Other Modes of Instruction.

A. The Educational Effectiveness of Instructional TV.

1. Data of Direct Relevance.

Although none can be so naive as to expect that decisions about instructional television in our institutions of higher learning will be--or should be--based solely on factual evidence concerning the educational effectiveness of the procedure, it seems reasonable to hope that future decisions about the medium will be made only after a full consideration of the available factual data concerning its effectiveness in advancing educational goals. As we shall see, faculty and student feelings about ITV run strong. Opinions are readily and firmly expressed, not only to research-oriented interviewers but to colleagues and administrators. And a majority of these feelings are negative to televised instruction, and are stated with great assurance even though it is likely that not many of these observers of ITV has encumbered themselves with fact before they state their feelings and beliefs. Actually, facts bearing on the matter have not been long nor widely available to teachers and administrators. But facts now are available from a number of comprehensive studies, and can now be injected, for whatever they are worth, into discussions of and decisions about instructional television.

In actuality, those who administer and carry out the programs of instruction in our institutions of higher learning are not always accustomed to considering quantitative data in the making of their evaluative decisions about procedures or arrangements or individuals involved in the processes of higher education. Research on such matters has lagged behind research on educational procedures in the secondary schools. Also research here has lagged far behind our research on the "educational" procedures involved in counseling and psychotherapy.

Part of this research lag may be attributed to the fact that those involved in higher education tend to subscribe, explicitly or otherwise, to the general belief that the complexities of learning at the higher levels are so great that the research methods that might be employed to study it are simply too crude to yield useful data. And also, and perhaps this is of more general importance, the prevailing idols of the academic tribe involve a resistance to any selfconsciousness about the adequacy of the established educational procedures. Not even in our behavioral science departments, where it is an established tradition to examine human behavior and to assess human performance under various conditions, has there been great willingness to seek factual data on the effectiveness of what we are doing for and to our students in our colleges and universities. Most teachers and administrators make decisions, with great apparent subjective certainty and comfort, on the basis of vague and inexplicit beliefs about what is good, what is effective and what can contribute to growth and development of our students. Every semester, hundreds of thousands of teachers assess with little doubt the academic performance of millions of students. Thousands of administrators somehow reach an assessment of the teaching effectiveness of those who assess the students. And we make other unselfconscious decisions about desirable educational procedures. We decide whether it's more desirable to have small or large classes, more desirable to have our graduate students or our full professors teach our introductory courses, more desirable to have students pursue specialized majors or to aim for a broadly oriented general education, more desirable to work toward ~~a~~ student-centered procedures or to stick to the more conventional teacher-centered procedures in our classes, more desirable to facilitate discussion or to present well-organised lecture presentations, more desirable to require attendance at class or to leave it optional. Can available research procedures bring relevant data to bear on these decisions? And, more to the present point, can research procedures tell us about the educational effectiveness of instructional TV as this medium compares with other methods of teaching students?

And if research methods can bring the light of evidence to the question, what does the light reveal? Does instructional television work? And if so, how and how well does instructional television work? Do students learn by televised instruction? And if they do learn, what and how much do they learn as compared with conventional methods of instruction? These are our central questions here.

Anyone who tries to think in hardheaded psychometric terms about the measurement of the educational effectiveness of any procedure encounters immediately certain problems. These problems are not of course unique to the assessment of instructional television; they are problems that must be faced by anyone who wishes to make empirically oriented statements about the educational effectiveness of any procedure in higher education. A first major difficulty that the researcher—or the selfconscious administrator—encounters is the fact that we simply do not agree on what are the goals of higher education. What are the characteristics of a well educated man? Not very many educators would agree, except at the level of great and pious generality, on the answer to this question. And even though we should agree at a high level of generality on a description of the attributes of the educated man, we would have a second and related difficulty in translating these desirable attributes into such behavioral terms as could be counted or assessed or measured. These difficulties, in all actuality, face any educator who must give a grade, or award a degree, or decide on the eligibility for reward or promotion of an allegedly good teacher. Any thoughtful educator can be quite eloquent in answering such questions, about high quality in educational procedures and attainments, but difficulties arise immediately when we find eloquencies of different educators showing no clear-cut congruencies or consistencies. And even should we get agreement at the level of eloquence, we would have considerable difficulty in translating the desired attributes of the educated man into those behavioral terms that make possible the use of the observational and quantitative methods of behavioral science.

It does not seem possible to think analytically and constructively about either the achievement of an individual student or about the effectiveness of procedures in bringing about the desired achievement, unless we think in terms of changes in actual student behavior over time. And, of course, we need to think in terms of changes in desired directions. Also, when we deal with the effectiveness or alleged effectiveness of any one particular educational procedure, we must deal carefully with the likelihood that the changes that are observed are due to the general processes of growth and development of the student or to the overall pattern of his experiences in his educational institution rather than to the particular educational procedure in which we are momentarily interested and of which we wish to assess the effectiveness.

Techniques of Measurement.

It seems not only possible but likely that we will eventually develop techniques that can deal meaningfully with the subtle kinds of intellectual and conceptual development that are outlined by Jerome Bruner (1962) or the intricate kinds of personality development as described by Nevitt Sanford (1962). At the moment we do not have such techniques.

But all is not lost. We do have very adequate techniques to measure with considerable precision the kinds of things teachers now measure in their awarding of grades. Achievement tests, well constructed, can measure with considerable adequacy the gain in information as the result of an alledgedly educated experience. Many instructors, of course, perceive the kinds of objective achievement tests now ~~any~~ used for this purpose to be tests of mere information. This seems to be a misconception. At least those who are involved in the creation of achievement tests are quite convinced that through objective testing methods they can also measure achievement in the use of symbolic materials in the solving of problems. And there is good evidence in the literature that well constructed achievement tests, dealing with both factual material and with problem solving matters, render results generally very similar to those obtained through the use of essay examinations. Such results are often difficult to interpret, of course, because of the fact that essay examinations are notoriously low in reliability; that is, no two graders of any given essay answer are likely to agree on its general quality. It occurs more often than is ever brought to light that two graders of an essay exam, each operating on the basis of untrammelled subjectivity, reach highly divergent judgments.

Also available, of course, are tests to measure with satisfactory precision any change in attitudes that may have resulted from the educational experience being examined. The art and science of attitude measurement is relatively well advanced.

While no one with a deep feeling for the complexity of the human personality and for the importance of its more subtle kinds of personal and intellectual development is likely to be convinced that we can now measure all or even the most important changes produced by education. But there still are no tenable grounds for rejecting presently available measuring devices. For they are used, by the vast majority of educators, and in daily academic life are likely to be used with less precision than they are used when they are created and employed by competent investigators. Also we face the practical question, of course, of what do we substitute for these available measures of achievement if we should throw them all out. What is left seems to be the pure, inexplicit and often inarticulable intuition of the teacher, which, though it may have great subtlety and sensitivity, may be unfortunately influenced by unknown and sometimes highly undesirable factors that can enter into the making of evaluations based on unbridled subjectivity.

The General Research Findings on Educational Effectiveness of ITV.

In the last ten years there have been many research attempts to compare the effectiveness of ITV with various other kinds of instructional procedures. Most typically, these assessment projects have employed achievement tests, sometimes of an almost purely informational sort, but often also of a sort that can be described as tests of problem-solving. There have been a number of measurements also of attitude change in televised as compared with more conventional modes of instruction. Further, there have been num~~b~~erous attempts to get at the relative effectiveness of the various nonTV modes of teaching as well as attempts to measure controlled and sometimes truly experimental conditions that effect some of the hypothetically important variables involved in complex learning. The present presentation will concern itself first with a general summary of the data comparing ITV with other forms of instruction; then it will examine research findings on other kinds of techniques for handling college classes and will end with an examination of research on some of the variables thought to be important for learning at the college level. The general operating principle here is that general familiarity with this literature will not only assist in the interpretation and appreciation of data from the present study but may, more importantly lead not only to hypotheses about the general nature of televised instruction but also to hypotheses about ways in which this educational procedure can be employed with the greatest educational profit.

Overall Summary of Research

Perhaps the quickest way to summarize the general tenor of research on the educational effectiveness of ITV is first to quote the summary statements of [illegible] alleged experts in the field and then to go on a bit later to at least specimen documentation of such statements.

C. R. Carpenter, who for a number of years has directed and been deeply involved in the research on ITV at Pennsylvania State University, presented the following summary statement at a 1958 conference on ITV sponsored by the American Council of Education (1958).

"The most challenging information that has been uncovered by our controlled experiments in educational television is that 'no significant differences' in student achievement have been revealed inour comparisons between TV instruction and conventional, direct teaching. Preliminary efforts to break through this quality barrier to reach new heights of teaching effectiveness with television have not succeeded. Nevertheless, the whole weight of reason suggests that this should be possible." (p. 15). Later on Carpenter says, "The experimental evidence, which has shown 'no significant statistical difference' between well-controlled direct and televised instruction, can best be interpreted as follows: In those courses that have been studied, the essential requirements for acceptable teaching are being met by the capabilities of well-operated television systems. In addition, it would seem that the known characteristics of TV do not significantly interfere with the instruction as it is conducted. Whether or not the instruction is ideally what it should be, whether or not optimum uses have been made of television itself are questions that need further investigation. Certainly we must determine what methods and procedures are the most effective supplements to televised instruction as a means of providing students with maximum opportunities to learn." (p. 16).

At the same conference, and responding to the same array of data, John Ivey reached a similar conclusion. He said

"We have done enough research to know what it will do in the sense of "n.s.d.," that ubiquitous "no significant differences," and we smile, for n.s.d. symbolizes the fact that we have broken through the major barrier; we don't have to debate whether or not this instrumentality can be used as effectively as a teaching medium as the classroom teacher is being used at the present time. Mark this conference and what was learned here as the pivot of the major operational phase of putting educational television into the heart of United States education."

"Even so, we have done sufficient research so that we do not have to go over the same old ground of replication and duplication before we take the big step in putting instructional television directly into our concept of higher education, and for that matter, into elementary and secondary education" (Ibid, pp. 160-161).

These relatively bald and inclusive summaries must be interpreted, of course, in the light of the limitations, mentioned above, in the sensitivity and scope of available measuring instruments. It seems more in line with both evidence and logic to say "as far as our available instruments of measurement extend, the most typical findings in research on ITV is that there are no significant differences between effectiveness of ITV and other kinds of more conventional instruction." And such a statement is almost surely in line with available data. And these data can be found with abundance. Our present review will concern itself primarily with the extensive data in the reports from the Pennsylvania State Study (Carpenter & Greenhill, 1958), from the Miami University Study (Macomber & Siegel, 1960) and from the Oregon Study (Starlin & Lallas, 1960).

Studies at Pennsylvania State University were conducted in the properly controlled manner whereby matched groups of students were taught by the same instructor in the conventional manner and over television. Report No. 2 from this series of studies gives results such as the following. Students in general psychology showed no statistical differences in retention test scores between students taught directly and by television. In general chemistry, with first semester freshmen involved, no significant differences in test scores were found between ITV students and conventionally taught students. In elementary business law, with groups of students a) taught directly, b) taught over television and c) rotated between direct and televised teaching, no significant differences were found in achievement tests. In introductory psychology, both in the general course test and the special test on the lecture materials, there were no significant differences between students taught over television and those taught in the conventional manner. In the course in music appreciation, students who were taught directly did not differ either in musical listening comprehension or in tests of factual information from students taught over television. ¶The primary measuring device in these Pennsylvania State Studies was the objective test having an emphasis on the learning of factual material. There were a number of studies, however, of the comparative effect of televised and direct instruction on change of student attitudes. In the introductory psychology course, for example, an inventory of beliefs was used to test student's attitudes toward people before and after both televised and direct instruction. Attitudes changed equally for the television students and for the conventionally taught ones.

The Miami University study, following essentially the same procedures as those employed at Pennsylvania State University, yielded essentially the same results, except that the Miami project attempted the more extensive use of tests designed to tap ability to solve problems before and after taking courses. On the latter tests as well as on the more factual ones, the results again ran to "no significant difference."

The Oregon studies (op. cit.) showed no consistent significant differences between conventional instruction, that is instruction in relatively small classes, and instruction in either large lecture sections or over television. There were differences between sections of any given course, but there seemed to be no way to account for these differences except in differences in the teacher and in the content covered. When there was specific special emphasis on achievement tests that designed to measure the ability to solve problems and to synthesize information, there were similarly small and generally insignificant differences between small classes, large classes and televised classes. With respect to changes in attitudinal stereo types and misconceptions from the beginning to the end of the year, the study of one TV class and three large non-televised classes revealed that the four classes were just about equally successful in changing stereotypes and misconceptions.

The Oregon study went further than tests of immediate recall in comparing the educational effectiveness of the various procedures; when the long term retention of material was measured, there was no significant difference, after periods ranging up to two years, in the amount of information retained in small classes, in large classes and in televised classes.

From the Oregon study come results basically the same as those reported from Pennsylvania State and from Miami University. The repetitive finding is "no significant differences." The Oregon study, involving an inter-institutional program, differed from the others in that it examined the achievement of students taking the course at the originating institution as compared with achievement of students at other institutions. Again, there was no significant differences in student achievement.

The Oregon study used an interesting illustration of what the effectiveness of televised instruction can be under what seemed to have been very favorable circumstances. In this part of the research project, the standard national achievement test in chemistry produced by the American Chemical Society was used to assess the effectiveness of various kinds of television arrangements as compared with a conventional course in chemistry. The television sections of the chemistry course involved only four fifty minute periods per week for all the material, including lecture, lab demonstrations and examinations. The other groups received an average of 3.1 hours of lecture instruction per week and an average of 3.6 hours of laboratory instruction, or a total of 6.7 hours per week. The achievement scores on the National Chemical Association examination was higher for the television sections. Such data seem to indicate that this particular televised course achieved more per unit of instructional time than did the conventional course. Why this should be is not explained. The report goes on to say that the chemistry students were particularly negative in their attitudes toward televised instruction at the beginning of the course, so that the gain in the televised sections as compared to conventional sections had to be brought about in what seems to have been, at least initially, negative conditions for learning. One wishes that the Oregon researchers had examined carefully the content and procedures of this particularly effective televised course. Was the outcome in favor of televised instruction due to the fact that it dealt more closely with the kind of content covered on the national examination? Supposedly this was well controlled in the experiment. Is chemistry likely to be a course particularly adaptable to televised instruction because of the importance of seeing clearly demonstration material? Did the teacher on the televised version of the course simply do better in organizing and presenting his material than he did when relieved of the pressure of appearing on television? These are unanswered questions. The data do at least illustrate, however, that television instruction under favorable circumstances can clearly surpass the effectiveness of conventional instruction, again as far as our measuring instruments go.

It seems eminently clear from available data that insofar as we can measure educational effectiveness by presently available means—which are means we use everyday to grade our students—instruction by television is at least as effective as instruction by more conventional techniques. There still exists no evidence that televised instruction is as effective as other methods of instruction in bringing about the kind of subtle changes in students which educators say they want to produce. But, in all reality, there is no acceptable evidence that any known educational procedure produces these subtler changes, or that any one known method of education produces them more reliably and more effectively than does any other procedure. It seems likely that some students during their college years do gain in a sense of their own intellectual potency, do learn to apply the skills of scholarship and of discovery, do find the exquisite satisfactions to be derived from the seeking and finding of connectedness and simplicities. And their personalities, in many cases, very probably do develop in ways that liberal educators would regard as desirable. These changes can be assessed over a long period of time, as the studies by Sanford (1962) and his colleagues at Vassar have demonstrated. But none can make the case that these changes are brought about even by the totality of classroom experience, let alone by experience in any particular classroom or by any particular contact with any given single faculty member. Students do grow, do develop, do tend to take on the kind of skills and knowledges and attitudes that teachers want them to have; but it seems now to be the reasonable conclusion that this change over time is likely to be due to the totality of the student's diurnal and inclusive experience in the college setting and is just as likely to come from his readings, from his discussions with his fellow students as from any particular experience in any particular classroom. The results cited above as well as some of those we will deal with later will be interpreted in terms of the statement that students are going to learn no matter what, or, if one wishes to put a pessimistic twist on it, students are not going to learn very much no matter what.

2. Supplementary Research on Educational Effectiveness.

The research on the over-all educational effectiveness of televised instruction as compared, under controlled conditions, with other forms of instruction, yield incontrovertible evidence that television instruction can be, and in the vast majority of cases is, as effective as other and more conventional educational procedures. But in order to appreciate the effectiveness either of televised instruction or of other forms of instruction, and in order to see in perspective the present convictions of faculty members about preferred educational procedures, it is desirable to examine the research literature concerning the effectiveness of various procedures and to see what is now known about the influence on student learning of the various controllable variables which have been thought to influence the learning process. Such a study of the research literature should enable us to make a reasonable assessment of the validity of the frequently encountered assertions about either the advantages or the disadvantages of ITV or the advantages or disadvantages of any other form of instruction.

a) Research on Class Size.

Almost any college teacher will state the conviction that small classes will almost always be superior to large classes in general educational effectiveness. Research evidence does not clearly support such a conviction. In a very extensive study at the University of Minnesota (Hudelson, 1928), a study in which achievement tests were used to measure the effectiveness of classes of various size, large classes more often than not turned out to be more effective than small ones. In a more recent research, by Rohrer (1957) no significant differences on achievement tests were found between large and small classes. ~~Macomber~~ Macomber and Siegel (1957, 1960) found that small classes seemed to be more successful in changing student misconceptions and that small classes tended to lead to a somewhat more favorable attitude toward the course itself. Further, these researchers found that small classes showed greater recall of knowledge after a two year period. It seems fair to conclude, as does McKeachie (1962) that if we measure educational effectiveness in terms of conventional achievement tests, the tests we most frequently use to give grades, the large size of a class is at worst no disadvantage and perhaps in some cases becomes an advantage. On the subtler changes we wish to produce in our students and on attitudinal matters, the evidence is not clear but tends to favor small classes.

b) Research on Lecture versus Discussion Procedures.

McKeachie (1962) summarizes the literature dealing with the comparison of lectures and discussion methods of teaching. He takes the general position that lectures are generally superior for the presentation and learning of information but that discussion procedures seem to be more effective in achieving what he calls "higher level objectives," including problem solving ability and attitude change. McKeachie cites a large number of individual researches showing either no significant differences or differences in favor of the lecture method in achievement on factual and informational tests. Discussion procedures have been found (Bane, 1925) to produce greater delayed recall, increased ability to solve problems and improved to adherence to the scientific attitude (Casey and Weaver, 1956). Also it has been shown (Beardslee, Birney & McKeachie, 1952) that those who engaged in discussion groups in elementary psychology were more inclined to elect advanced courses in psychology than those who attended lecture sessions.

In comparing lecture procedures with discussion procedures, of course, we do not know what actual variables are involved in the comparison. The same general statement holds for questions of class size. The important thing is what happens to students, what happens that is conducive or not to some kind of desirable change. Many subtle psychological variables can be involved under the tent comparisons of large versus small classes or discussion classes versus lecture classes. At one relatively high level of analysis, Clarence Faust (1958), makes a point of relevance for the comparison of lecture procedures with other educational procedures. He says, "The essence of this process of education is not communication from the teacher to the students, but the stimulation of profitable reflection in the student. And the essence of the educational process is the stimulation of minds by other minds or the stimulation to engage in that internal dialogue by which conflicting ideas come to confront each other in the learner's mind so that in some measure the resolution we call knowledge or wisdom takes place." (p. 145). Later Faust says, "First it may occur when a challenging lecturer excites the attention and interest of students, arouses their minds to activity in weighing what he has to say, stimulates them to seek understanding, to arrive at conclusions, to estimate the degree to which the judgments they make are to be held as tentative or conclusive." (p. 146). Here Faust puts a finger on a number of the more molecular processes in learning that may occur either in a lecture or in a discussion, either in large classes or in small classes. In effect, we can hold that a comparison of effectiveness of large or small classes, of lecture or discussion procedures, are relatively superficial kinds of comparisons and if we are to understand the results we obtain we need to examine some of the more molecular processes and variables that can effect student learning.

A treatment of some of these more molecular variables will concern us later.

( ) Student-Centered versus Teacher Centered Procedures.

Still at the level of gross comparison of gross techniques employed in the educational process comes the matter of the comparison of classes that have been called "student-centered" versus those that have been called "teacher-centered." In student-centered classes students are given more responsibility, are engaged in more activity, are given more to say about what happens in the course, are encouraged to use the teacher not as the source of final authority but as a resource for problem solving, etc. In a way, student-centered classes are similar to the classes, discussed above, taught by the discussion method. By contrast, teacher-centered classes are those in which the teacher does most of the talking, serves as an authority, and lays out well organized presentations of facts and problems in his field. He is not concerned that students participate actively either in deciding how the course shall be run or in the clarification of a particular point as they arise.

It seems fair to summarize the dozen or more studies on student-centered versus teacher-centered classes as follows: (1) student-centered classes are not superior to teacher-centered classes in terms of the commonly used measures of academic achievement; (2) student-centered classes generally yield more satisfaction to students than do teacher-centered classes and (3) student-centered classes most frequently result in more insight into other people's behavior and in more gain in general adjustment of the student. McKeachie ([illegible]) In his summary of the research in this area cites a number of studies wherein no significant differences in achievement were found between the two types of procedures. There are other studies showing superiority of the student-centered classes in producing insight into behavior. And some student-centered classes seem to present gains in adjustment as measured by such instruments as the Minnesota Multi-Phasic Personality Inventory. Other studies cast some doubts on these findings, however. For example, a research by Guetzkow, Kelley and McKeachie (1954) indicated that a more autocratic recitation method, when compared to student-centered methods, not only produced superior performance on final examinations but also produced greater interest in psychology as measured by election of advanced courses. Also students liked the recitation method better. An an additional study by McKeachie (1954) further complicated the matter. His data suggest that the effectiveness of the group-centered approach varies with the readiness of the group to set norms and goals for itself and that in some groups, unprepared to accept responsibility, the permissiveness of the teacher may simply lend increased ambiguity to the situation and thus will reduce both learning and satisfaction.

The latter studies, whose findings run somewhat counter to the general findings on this problem, raises problems about the actual processes and variables at work in student-centered as compared to teacher-centered classes. What actually leads to greater learning? More active recitation? More clarity of structure? More accurate and immediate feedback from the teacher? A higher degree of relevance of discussion and content from one end of a class to another? These are as yet unanswered questions, but research to be summarized below has a bearing on such questions.

There will probably be an increased research interest on problems of group and social dynamics in educational settings. There is amassing a body of research knowledge to indicate that group processes can have an enormous influence on the individual member of a group. Groups who do formulate their own norms and differentiate their own roles, who do become highly cohesive can exert an almost paralytic influence on their members. Such influence can be exerted toward the achievement of goals which an outside observer might regard as highly admirable, or the influence can be exerted to keep the individual slavishly adhering to the group norms, perhaps of a delinquent kind, even in the face of external pressure of considerable magnitude. As yet no thoroughgoing analysis has been made of the kinds of group structures that can and do occur in the academic setting and the effects of group processes on the educational advancement of individual students. There is increasing evidence that institutions of higher learning differ very significantly in the kinds of norms they establish and in the kinds of influence they exert on individual students (Stern, 1962). And certainly the pressure to adhere to norms of scholarship and sophistication will produce results different from those produced by the pressure of norms that seem to be centered around social, political or athletic achievement. But what actually happens in small and student-centered classes? Can such a class truly become a group, in the sense that groups are formed in laboratory situations or in social psychology training laboratories? What does the small academic group do with the teacher, who is there as an imposed leader but who has a strangely dual role; he not only is the intellectual leader of the group but he is also its judge. As long as he has to be the judge can there be a true cohesiveness in the group or is it inevitable, particularly where grading is handled by "curving", so that every individual in the group is at war with every other individual in competing for a scarce commodity--grades? Anyone who knows the evidence for the extreme potency of a tightly cohesive group may well wonder about the circumstances in which cohesive groups do and can adopt as their own the kinds of goals that the faculty would approve. Under what circumstances do cohesive groups of students establish the norms that are desirable in the eyes of the faculty, and under what circumstances do they become rebellious groups, regarding any member of the faculty as an enemy and setting group norms that reject as a traitor or 'ratebuster' any student who conforms to faculty norms? These matters need investigation. Also we need more simple descriptions of what actually transpires in the so-called student-centered classes. What is the level of active participation? What is the degree of relevance of discussion? How much practice is there in the correct use of concepts, in the articulate expression of sound ideas, in educative contention with conflicting ideas? How much dependence is there on the teacher, or on the stronger members of the class? How much true acceptance of responsibility is there on the part of individual students, responsibility for their own guidance and for their own structuring of their own education? Does the group make the individual more or less dependent? Many of these questions, some of which are touched upon below, need to be dealt with before we are able to make statements about what kind of small groups procedures, whether so-called "student-centered" or simply discussion groups or seminar groups are conducive to educational advancement or to what kind of individual growth on the part of what kinds of students.

There is abundant evidence that both teachers and students theoretically favor more the smaller, more intimate, more student-centered procedures. There is ~~ambiguous~~ evidence much less clear that such procedures contribute significantly more than others to the achievement of educational goals.

It seems a fair summary of the research on small vs large classes, on discussion vs lecture procedures and on student-centered vs teacher-centered procedures to say that the small class that is student-centered and in which discussion is free has a number of educational advantages, the most significant one of which is the increased satisfaction of participants. But the demonstrable advantages are not of any world-shaking magnitude, and it seems a clearly tenable statement that these more intimate procedures are by no means equally effective for all students or all subject matters. When all the data are examined it may turn out that when the educational gains and losses of these procedures are matched with the obviously greater expense involved, the gain per unit of cost will be judged less than worth while. Also it is not unreasonable to expect that when we gain more knowledge of the actual procedures involved in successful and effective learning of complex skills and insights, that many of the advantages of the intimate interchange can be realized through logistically more realistic pedagogical procedures.

d. Research on Variables Affecting the Learning Process.

For the assessment and appreciation of televised instruction, the evidence on the effectiveness of other instructional arrangements, such as those stated above, has a clear relevance. Also relevant is the evidence from the somewhat more molecularly oriented research on the variables, whatever the class setting, that are alleged to relate to the effectiveness of learning in college. A study of such evidence--and there is an increasing volume of it in recent years--will make possible some evaluation of the allegations, both positive and negative, about the effectiveness of televised instruction. Also such evidence can furnish guidance for the use of any given procedure in such a way that its effectiveness can be at a maximum.

1) The Active-Passive Variable.

Learning specialists who have turned their attention to problems of college-level learning almost universally recommend an active approach to learning. The watch word is "don't just sit there, do something". Many of the perceived advantages of discussion groups and other student-centered groups are at least implicitly based on the assumption that in these situations students are more actively involved in the learning process and hence will learn more effectively. This, on the surface, appears to be a good assumption, but it is one which needs both logical and experimental examination. One frequently heard criticism of televised instruction ~~having to do with~~ bear on this variable of activity-passivity. The common perception is that television renders the students more passive and diminishes the likelihood that he will become actively involved in any learning process. Hence, the interpretation is, he will not learn. Of course, the evidence of the general and comparative effectiveness of televised instruction does not bear out such an interpretation, but the activity-passivity question remains a matter that needs examination.

It seems a highly reasonable hypothesis that practice does make perfect, that active involvement in the learning process will be educationally beneficial. At the same time, it may be possible that active practice is much more beneficial for lower level skills than it is for the high level cognitive learning with which most of college education is concerned. And it just could be that students who appear passive in lecture courses or in televised courses are indeed very busy in those cortical areas where we want the busy-ness to transpire. Relatedly, it may well turn out that much of the activity that goes on in student centered groups or in discussion groups or in question-asking-and-answering groups is not the kind of activity that is conductive to the kind of learning we wish to bring about. Grosslight (ACE book) recommends that we think in terms of the possible importance of "covert" participation on the part of the student when we are dealing with matters of activity and passivity in the classroom. Grosslight points out that covert participation can and very probably does include the critical evaluation of data and of conclusions, the consideration of the appropriateness of evidence, and the student's attempts to test the transferability of generalisation. Grosslight also makes the case that the student, though not moving a muscle, is constantly giving himself feedback from his own established systems. On the basis of his past experience and familiarity with the questions, some of which has just been given him by the instructor, the student is empowered to question or criticize or to investigate in his own way, by implicit trial and error behaviors, the kinds of statements the instructor is making.

On the same point, Harris (1958) makes a similar observation: "We know however that a student may be interacting vigorously, though never twitching an eyebrow." (pg 131). And this brings to mind of course the earlier statement by Faust in which he emphasized the importance of the student's profitable reflection, disciplined internal dialogue, etc. Teachers tend to assume that this kind of process does go on in a class when a teacher is there personally to facilitate it and that it is less likely to go on in any other circumstances--particularly when that presentation is televised. Although there is no evidence having a direct relevance to the matter, one can make the case that a televised presentation, or the presentation of any gifted lecturer, can produce the kind of active participation, puzzlement, involvement, and internal testing of hypotheses that we want to occur, provided the teacher is gifted at what Bruner (1942) has described as the art of intellectual temptation. Along this line one experiences teacher has this to say: "There may be many occasions on which the teacher, through reliance on vocational carrots or other extrinsic rewards for learning, simply drives the curious student away. The bright and curious student may feel that learning literature or algebra is not going to be of any particular good for him if he's headed into pharmacy or veterinary medicine. But if the teacher has worked to arouse a strong autonomous need to know, then he is not caught in the falsehood of holding out maladaptive carrots. In addition, he is devoting his energies to arranging his subject matter in a manner that can constitute an incentive to a potentially powerful motive for learning." (Sutherland et al, 1962, p. 20-21).

"We can build up a picture of how teaching would progress if we really concentrated our efforts on the arousal of the need to know or the arousal of native curiosity rather than on any of the other kinds of appeals we make to students. Good teachers probably already do this, from the first grade on up. Maybe we need to say that many motives are operating simultaneously. We probably should arouse them all and unless we have procedures by which we can trigger off the curiosity motive or the derived need to know, we may be missing the motivational boat. Somehow the college environment needs to be structured in such a way that intellectual needs have a fair chance of reaching arousal." (Ibid, p. 23.)

The matter of the freedom of students to ask questions in class is frequently brought up in discussions of educational procedures, particularly when there is a consideration of televised instructions. In most of the studies of both faculty and student attitudes toward televised instruction, a frequently mentioned disadvantage is that of the inability to ask questions "when they are hot". There is no research immediately relevant to this point, but many experienced teachers have dealt with it and have indicated considerable ambivalence about the value of student questions. Anyone who has taught an introductory course has had the experience of being asked questions that seem to have no possible relevance whatsoever with the points being discussed at the moment but spring purely from some almost adventiously aroused need of the student. In psychology courses, for example, instructors can almost surely count on there being questions about such things as hypnosis and extrasensory perception whenever there is a free questioning period; and these questions may come when the point under discussion is a matter of experimental design or of schedules of reinforcement in learning. Such questioning may increase the students' felt involvement in the class, but they certainly do not contribute vey much to the discussion in progress or to the education of other students. Skillful teachers of introductory courses report that they try very much to keep the student feeling that asking questions is a good thing. They try to avoid punishing a student for bringing up irrelevancies, that they do some relatively fancy intellectual gymnastics to make student questions appear relevant to the problem under discussion, and that they exert considerable effort over time to teach students to obey the rules of relevancy. It is also clear the motives for asking questions in class frequently are not closely connected with the student's desire to learn subject matter or to contend successfully with intellectual problems. They represent gambits in the game of getting grades. They represent a student's attempt to call himself to the teacher's attention. They sometimes can represent a student's attempt to gain a certain kind of reputation among his fellow students. Such questions asked for such purposes are hardly conducive to great intellectual advancement.

Another aspect of this matter of questioning and discussion in class, concerns the readiness of students to pursue an organized and relevant discussion. The study of McKeachie, cited earlier, bears on this point. While it may be a very good thing for students to engage in active discussion in class, to ask and receive a stimulating answer to questions, it seems better, all things considered, if the discussion is based on knowledge and if the questions are relevant to the pursuit of knowledge. As McKeachie points out, these conditions are not always met, particularly in introductory courses and with freshmen or sophomore students.

Not only can there be doubt about the educational virtue of student questions and of student discussion, there can be doubt that teacher behavior in the face of questions is always condusive to the intellectual growth of students. Blake (1962 points out that "asking questions may be more in the service of psychological needs than educational requirements; a teacher may provoke questions to exercise his authority by answering them, thereby meeting his own needs. This motivation is apt to be denied most vehemently by those who are most guilty." (pg. 96).

At the moment, it seems reasonable to take the stand that student activity in the learning process, student participation in his own education, the asking and the answering of questions, the pursuit of relevant discussions, are all desirable procedures. But in making judgments about the educational effectiveness of such we need to look beyond the superficialities involved. It is not activity per se, not overt activity per se, it is not questioning per se, it is not discussion per se, that is likely to advance educational ends and we need to bear in mind the concept of covert participation and ways in which it may be facilitated. There is no reason that the skilled lecturer or the skilled instructor on ITV cannot through the proper arrangement of his material produce as much "intellectual temptation", as much stimulation, as much intellectual involvement, as much covert questioning and feedback, as can be produced in a free discussion. While the influences exerted on an individual, and the satisfactions he derives, are greater in small and face-to-face situations, the educational benefits of much of this intimate interaction may be somewhat limited. Those that are most likely to be in line with the pursuit of educational excellence, may at least occasionally be brought to bear through the skillful use of less intimateless personal procedures.

2) The Personal Touch

Both teachers and students put a high evaluation on personal contact.

Teachers want personal contanct and students at least say they want personal contacts with teachers. And both teachers and students seem likely to believe that personal contact is of vital importance for the achieving of educational goals. The most frequently seen disadvantage of televised instruction in all the studies yet conducted has to do with the impersonality of the medium. Since all of us, whether teachers or students, have had a lifetime of experience of person-to-person interaction—perhaps a lifetime addiction to the satisfactions that come from immediate evidence that one has had an effect on someone else—it is completely understandable that we prefer intimacy and personalness in our teaching and learning activities. It is not so clear however that intimacy and person-to-person contact advance education as much as we tend to think it does. There is probably good reason to question what both teachers and students really mean when they express their desire for intimate contact with one another.

Teachers who have presented their courses over television almost universally report that they miss feedback from their students, that they feel lost without the opportunity to read student expressions, to estimate on the spot whether or not they are communicating. They also, though they do not say it as often, miss audible laughter and occasional bursts of evidence that they are having a definite and pleasant effect on somebody.

Students, in reacting to the idea of televised instruction before they've seen any, almost unanimously will perceive it as an impersonal kind of thing. Evidence from the Oregon study indicates that this felt impersonality can decline very significantly through a year long experience with a television course, but the desire is there and the felt lack of the personal touch is likely to persist throughout a televised presentation. But does this dissatisfaction with the alleged "personalness" of the televised instruction really bear on academic achievement? Apparently not, for our general results, cited earlier, suggest that television instruction results in just as much measured achievement as does conventional instruction. Why do students, then, still feel deprived when they have no personal contact? Some hypotheses can be formulated out of the description of students' orientations to instructors. They may, out of simple fear of examinations, want all possible personal contacts with an instructor in order to learn all they can about the rules that are likely to guide him in formulating questions for the exam.

They want to know what he thinks are important points, so they can concentrate their learning on that. Some, of course, want him there in class so that they can try at least to exert personal influence on him that may redound to their credit at the time of grade giving and getting. Others of course regard the educational process as a very human process and they really do desire complicated intellectual interaction with an individual whom they can use profitably in their own educational advancement. What about evidence on the educational effectiveness of the personal contact? There is one study that is a direct relevance here. Klapper ( ) conducted a study of freshmen students enrolled in a televised course. They were divided into four groups, each group with a different discussion leader. Two of the groups had graduate students for discussion leaders while the leader of the third group was a faculty member who also presented a small number of the televised lectures. The fourth group was led by the faculty member who presented the majority of the televised lectures. The procedure was to have some televised lectures followed by small discussion groups. Thus two of the groups had no personal contact with the televised instructor while the latter two groups had different amounts of personal contact.

On uniform exams, the section having contact with the lecturer did no better than sections having no such contact. As a matter of fact, the highest scoring class was the one led by one of the graduate students. The four groups did not differ significantly in their attitudes toward the course or in the frequency with which they thought the television course was "too impersonal." Also there were no differences among the four classes in their expressed interest in taking advanced courses in the subject. At the end of the course, only 11% of all the students thought the TV course was too impersonal while 53% said that the TV course brings the instructor closer to the students. Seventy-four per cent expressed a desire to take another TV course.

A number of observers of problems involved in ITV maintain that because the television can bring so close to the student the face and the facial expressions of the instructor, televised instruction can be more "personal" in a sense than any other kind of instruction. Certainly students do have opportunity to become intimately exposed to the instructor and perhaps they've seen no instructor so intimately as they see one on television. And the people who are accustomed to reading facial expressions for their interpreting the course of a discussion may find that television, in a sense, is more personal than any other form of instruction. Grosslight ( ) refers to this as "eye contact" and says that eye contact between teacher and student, though necessarily one way, is greater in televised teaching than in large face to face groups. Grosslight goes on to say also that a factor on the perceived personalness of televised instruction is increased by evidences of the teachers own humanness and fallibility in the televised instruction. Grosslight says "Occasional errors in presentation, I feel, increase the student's identification with the instructor, increasing the authenticity of presentation, increasing the psychological distance." (pg. 45). It seems likely that televised procedures, showing the student the details of the teacher's face and the changes in expression occurring as his thought processes advance, particularly if these are done with an air of pedagogical humanness rather than a flavor of professional slickness, can make a televised course more personal for the student than can a large lecture section. But this is a matter for exploration.

From the Oregon study comes an interesting report of an attempt to increase the personal contact between students and their instructors appearing on ITV. Deliberate and fairly elaborate attempts were made to set up informal dinner meetings to which students in a televised history course were invited to come and have dinner and visit with the instructor of the course. Dinner was free and transportation was provided. Only about half the students availed themselves of this opportunity to meet the television professor and some of those who did come to dinner left early because of previous engagements.

Next was tried a series of informal coffee hours held on various campuses in the Oregon network. These were scheduled at convenient and non-conflicting hours and the students were told that this would give them a chance to meet their television professor and to talk with him personally. Unless students were required to attend, however, the turn-outs at these coffee hours were very small. Students obviously did not want that kind of personal contact with the television instructor. Another procedure met with somewhat greater success. On one occasion the televised instructor from another campus engaged in a television discussion with students on their particular campus and later visited discussion sections to talk with students. This procedure seemed to result in an increase in favorable attitudes toward the television course. There is no evidence that there was an accompanying increase in academic achievement.

Earlier cited was the fact that in the chemistry course in the Oregon project approximately seventy per cent, before the study was begun and before the course was scheduled, expressed a concern about the lack of personal contact with the instructor. At the end of the course, there was a reversal of this finding in that seventy per cent of the students stated explicitly that they were not concerned with these personal factors.

Some tenable hypotheses seem to evolve out of this kind of consideration of the personal factor in education. They have been implied already. One hypothesis is that students with high test anxiety will be particularly disturbed by the lack of personal contact with an instructor. And such students would probably also prefer that the individual who conducts the two televised sessions of a given course during the week would also conduct the third. For them, getting acquainted with the teacher as a potential judge is important and they will not like the anxiety produced by having to become acquainted with two potential judges. Another hypothesis is that students who demonstrate some kind of dependency upon the diurnal and avuncular pat on the head, will be made more anxious by the absence of a personal relationship with the instructor.

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Conversely the students who are more oriented to ideas per se rather than to personal reward and punishment from teachers will be more indifferent to personal contact. A different hypothesis, and one in some ways cutting across the earlier ones, concerns the type of student for whom ideas and people are closely related and who regards education as a process that is human from one end to the other, and who wishes personal contact and personal intellectual interchange with a professor. Such a student would feel deprived, and very justifiably so, in a televised course. None of these hypotheses has any great bearing on the educational effectiveness of the personal factor.

3) Identification, Transfer and the Use of the Teacher as a Model.

Related to the questions of the so-called personal factor in teaching are questions concerning the extent to which students identify with their teachers, or use their teachers as models, or transfer to their teachers attitudes they have had about other adults in their lives. And of course immediately there come questions about the educational desirability of transferrence and identification and the adoption of teachers as models. Closely following these questions are those concerning the educational procedures most conducive to desirable and educationally constructive identification and transferrence. The studies of Knapp and Goodrich (14) and others indicated that students who go on to graduate work report with considerably frequency that one particular teacher had a great influence on them. And it appears that something like identification with such a teacher did transpire. But little is actually known about the processes of identification in a college setting or in late adolescence or the conditions under which it can occur. And less is known about the desirability of facilitating such identifications. But we still need to know, with respect to ITV, whether or not there can be a student identification with a televised instructor and what, if any, are the conditions under which identification does and does not occur. Children do seem to identify with Superman or Palladin or Sheriff Dillon on the basis of a televised acquaintance only. Is this genuine identification? Does it have anything to do with the formation of behavior patterns? And do equivalent identifications happen over television in a college setting? Again, no answers.

4) Student Motivation.

It is eminently clear that the student's pattern of motivation has a direct bearing on his performance in any kind of academic setting and under any kind of teaching procedure. There are students motivated to achieve whatever the task and whatever the setting. There are others who are motivated to get their grades by whatever means and to get out of college. There are others who are motivated to use college as a stepping stone to a vocation. There are others who are motivated to be as unaffected as possible by the academic procedures in college but to survive in order to enjoy the benefits of a broadening and pleasant social experience. There are others who demonstrate a genuine curiosity motive and who appear to gain what Bruner ( ) has described as a sense of their own intellectual potency and who do experience occasionally the excitement of discovering for themselves some of the simplicities and regularities and relatednesses in the world. There are students who are ready to accept responsibility for their own education and who do not need the daily discipline or the daily administration of rewards and punishments by teachers. Other students will not work without such explicit and extrinsic rewards. Certainly all of these motivational factors in students have a bearing on their performance in class. They probably do not have a very significant bearing on one kind of educational procedure or on another. Some students clearly miss the extrinsic control of their behavior by an instructor in a face to face situation. Some instructors obviously miss the personal administration of positive and negative reinforcement for student performance. Neither these teachers nor these students will be favorably disposed toward televised instruction, either in general or for them in particular. But again, there is no evidence on the implications for educational effectiveness here. It may be, as some others have pointed out, that taking a course by television puts more of a burden on the independent motivation of the student in that it does deprive him of the intimate reinforcement administered daily by the instructor--a reinforcement that may teach dependency rather than a subject matter or anything else that is academically desirable.

One might well expect that beginning students, fresh out of high school and recently accustomed ~~in~~ to a relatively intimate and perhaps dependent contact with their teachers, will feel lost, not only in the university at large where everything is more impersonal, but perhaps particularly lost in televised classes where they ~~have~~ do not have intimate guidance, ~~no~~ hand holding, ~~no~~ or daily opportunity to gain extrinsic feedback of either a positive or negative kind from a benign teacher. One hypothesis is that such students will be more negatively inclined toward television. A related hypothesis might well be that if they survive both in college and in the televised course, ~~they~~ they may have been led a bit toward growth, toward the state in which they have learned to administer to themselves their own feedback, the state in which they have learned to pay attention to intrinsic rewards which only they themselves can administer. Such an hypothesis seems a little thin, but perhaps deserving of some consideration.

Certainly the question of the students' acceptance of responsibility for his own guidance has a bearing on his tolerance for and perhaps his profit from ITV. Certainly the acceptance of responsibility has a bearing on his performance in college. A research by Patton (1955) has shown that students in psychology classes who are high in the acceptance of responsibility for what reading they would do and what class procedures they would use and what work they would hand in and how they would be graded, differed significantly from members of a traditional class in their favorable judgment of the value of the class, in their level of interest, in the quality of their motivation, in their analyses of the motivation of behavior; also they were higher in achievement tests and more interested in the subject matter. This kind of research finding deserved further exploration, particularly as it may apply to ITV. Because of the fact that televised instruction frees the student--or deprives him--of the immediately controlling influence of an instructor, he is left on his own. If, on his own, he accepts responsibility for relatively unguided work, then one may make a case that the televised mode of presentation is likely to be conducive to his greater learning and greater growth.

Also one must remember that the opportunity to dodge responsibility is there, for in a televised course there may be no one to make him pay attention, no one there to give him gentle encouragement for being a "good boy", no one to call him back from his reveries, no one to threaten him with failure should he fail. Under these conditions, students not yet ready to accept responsibility may find themselves drifting badly. This kind of consideration suggests the desirability of the exploration of ways in which televised instruction may be combined with procedures designed to help students accept responsibility for their own education.

Some data bearing on the question of students willingness to take responsibility for their own education is furnished by the studies at Pennsylvania State University (5p). One particular study dealt with the effect on achievement of three different amounts of supervision in TV classrooms in general psychology. A total of more than 200 students were randomly distributed in the five classrooms with each classroom operating under one of the following three conditions:

1. No supervision except that its teaching assistant recorded attendance in each of two different classrooms and then left the room.
2. Partial supervision by a teaching assistant who monitored the class and recorded attendance during one-half of each class period in each of two different TV classrooms.
3. Fulltime supervision by a teaching assistant who recorded attendance and was always present during each class period. The proctors did not discuss attendance; they simply recorded attendance and controlled student

behavior that might interfere with other students hearing and seeing the presentations.

On achievement tests, there were no significant differences found between the students in the three classrooms. Actually, the groups scoring highest was that in which the proctor was present only fifty per cent of the time. The researchers make the following statement, in summary:

> Thus, there is no evidence for the need and justification for providing proctors for college students in a general psychology course when the role of a proctor is merely that of "keeping order", being present and recording attendance. (pg. 25).

One might well expect that the absence of a disciplineing or a discipline-keeping proctor does result in less work and less tension on the part of some students. But, at the same time, such an arrangement may put other students on their mettle so that they pay closer attention. It may be reasonable to expect that the gain on the part of one kind of student is matched by loss on the part of another, so that the gross outcome shows no difference. There are no data bearing on this. Of closer relevance to the question of student acceptance of responsibility for running their own lives is a study of the number of absences from a class in the psychology of marriage under three conditions of proctoring. In the first of three equated class sections, there was no proctor present and attendance was optional. In the second class there was a proctor but attendance was optional again. The third class had a proctor and attendance was compulsory. Absences were 9.96 per cent in the class having a proctor and rules of optional attendance, and 11.33 per cent in the class having no proctor and optional attendance. The class having a proctor with compulsory attendnace achieved an absentee percentage of 10.91. There were no statistically significant differences here between any two of the conditions. The results again do not relate the acceptance of responsibility to educational achievement, but they do show that students can accept responsibility and do come to class just about as often when attendance is optional as they do when it is officially required. In another experiment in the Pennsylvania State series, the achievement of two groups were compared when one group of students in elementary meteorology was split with one group volunteering for an experiment in independent study, while the other was required to attend regularly scheduled classes. The independent study group did not attend any of the lecture demonstrations in this course during the experimental period, but, like the students who were required to attend class, were given the topical outline and a reading guide to follow. An achievement exam at the end of the experimental period showed no significant differences between the groups under compulsory attendance and the independent study groups. The results maintained both for televised and for directly taught sections. Again there is no direct evidence that the acceptance of responsibility on the part of the independent study students contributed to greater average achievement. But it did not lead to less achievement. Also of course such data have a frightening bearing on the question of the general importance of classroom events when such events are viewed in the over-all context of the life of the learner.

Summary of Research on Educational Effectiveness of ITV and Other Classroom Procedures

There is no point here in trying to piece together a brief but inclusive picture of the research on the educational effectiveness of ITV or of other classroom procedures. There *is* point, however, in trying to see clearly the major implications of this large and growing body of research. And these major implications seem to the present writer to be four in number and to be deliverable as follows:

1. *There is no longer room to doubt that instruction by television can reach a high degree of educational effectiveness.*

2. There *is* room to doubt that variations *of any kind* in classroom procedures will make a major difference in either the educational achievement or the personal development of college students.

3. Variations in classroom procedures relate more obviously to the comfort and reportable satisfaction of teachers and students than to factors of educational effectiveness.

4. The future acceptance and development of ITV will depend on factors other than a consideration of evidence on its effectiveness as an educational procedure.

Each of these statements could be, and perhaps should be, given extensive elaboration. At the moment, however, it may be best to let them stand and to go on to other considerations.

II.B. Faculty Reaction to Televised Instruction.

A primary assumption guiding the planning of the present research concerns the significant role of faculty acceptance in the future--at least the immediate future--of instructional television. Although the role of the faculty in decision making may vary enormously from campus to campus, and though on some campuses the faculty is never allowed to participate very actively in decisions effecting either educational polocy or educational practices, it seems fairly obvious that a reluctant and doubtful faculty can, by direct or indirect means, sometimes prevent entirely, and at any time delay significantly, any kind of change in educational procedure. It was also an initial assumption that faculty reaction to televised instruction would vary from individual to individual, from institution to institution and that there would be variations also with other kinds of variables. In dealing with the whole topic of faculty reaction to instructional television, the following presentation will deal first with available research data on faculty reactions. Then there will be a treatment of some of the literature on the general plight, role and motivations and conflicts of the college teacher. Both the treatment of available data on faculty attitudes toward instructional TV and a consideration of the faculty member in his social, economic and organizational setting should contribute to the proper appreciation of the factual results of the present study.

II.B.1. Data on Faculty Reaction to Televised Instruction.

In a number of studies involving faculty orientation to televised instruction, the general findings have been about as follows:

Faculty members in a variety of institutions, particularly before they have had any first-hand experience with televised instruction, tend to be opposed to it as an educational procedure and very dubious about its educational worth. For example, in a study at Miami University of Ohio (17),5 a study involving a several-year exposure to televised instruction and a motivated study of its general effectiveness, only 11% of the faculty expressed themselves, at the end of two years of experimental use of ITV, as having general and unqualified enthusiasm for the televised instruction. An equal percentage wanted to throw out the procedure entirely. The remaining 78% wished to use the medium either in circumscribed and specific situations or to use it off the campus but not on. The faculty did, in the Miami study, show a willingness to consider TV instruction a little more favorably if it were sure that the university was to be faced with a severe problem of increased enrollment. When asked about alternative solutions to the problem of increased enrollment, 71% recorded themselves as favorable to TV and other large group procedures in courses with a large enrollment.

At Pennsylvania State University ( ), at the beginning of a large scale use and study of televised instruction, only 28% of the faculty recorded themselves as favorably inclined toward television instruction in the face of large increases in enrollment, while 37% favored increase in class size as a way to face the enrollment problem. At the same time the Penn State faculty was asked about their perception of the quality of TV instruction as compared with direct instruction. Fifty-two per cent thought that TV would be worse, 10% felt it would be better while 33% thought it would be the same. Sixty-four per cent of the faculty expressed the belief that the use of TV would

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have either a great deal or a slight adverse effect on the quality of college education. When asked about their behavior in sending their own children to college if they had a choice of sending the child to an institution where TV was used a great deal or to an institution where it was not used very much, only 8% of the faculty who were not then teaching on television said that they would choose the institution where TV was used, while 59% expressed a preference for the non-TV institution. In a study in the state of Oregon (Starlin & Lallas, 1960), involving an inter-institutional program of instructional television, the acceptance on the part of the faculty varied quite significantly from one institution to another. After a two year involvement with an experimental program, the percentage of the faculty saying that instructional TV was either an excellent or a pretty good approach to teaching varied from 75% at one institution to 42% at another. The figures for the two other institutions in the program were 62% and 58%. There were no data in the study on faculty attitudes on ITV before the project was initiated. Evans (1962), recently employed the semantic differential device to secure faculty reactions to television at the University of Houston. These reactions, secured after the university had been participating for some years in active programs of instructional television, showed in general a negative or at least unenthusiastic reaction to television both in introductory courses and in large classes. In the same study, when the faculty members were asked to rate in order of preference fourteen different teaching methods, the faculty ratings put classroom lectures first, television lectures thirteenth and teaching machines fourteenth. Evans also found less than favorable reaction to the idea of television instruction supplemented by small discussions, and to the idea of the faculty member himself conducting a television course.

These results clearly add up to the general finding that college faculties, before they have had any intimate experiences in instructional television on their own campuses, and in the case of Houston even after considerable exposure to television on the campus, do not look with any degree of enthusiasm on ITV as a teaching medium.

II.B.2. Change of Faculty Attitudes with Time.

The fact that experience, at least favorable experience, with instructional TV can have an effect on attitudes is indicated by the results both from the Pennsylvania State study (Carpenter & Greenhill, 1958) and the Oregon study (op. cit). At Penn State the faculty was questioned both before and after a two year use of ITV on the campus about their preference for television as a device for handling the problem of increased enrollment. In two years, from 1955 to 1957, this percentage had risen from 28 to 34%. In 1955 52% of the faculty judged TV as worse than direct teaching in general quality, but in two years that figure had fallen to 38%. The Oregon study, although it did not give explicit data on faculty attitude at the beginning of their two year experiment, presented figures showing that there was, at least in some institutions, a considerable degree of terminal enthusiasm for television instruction. At the end of a two year period, the percentage of the faculty members saying that television instruction was either an excellent or a pretty good idea, varied from 73% at one institution to 42% at the other. Figures for the two additional institutions were 62% and 58%. Presumably, the faculties at three of these institutions had had a favorable experience with their inter-institutional program of television and it is a fair guess that willingness to consider it favorable had increased over the two year period. It seems a sensible conclusion on the basis of these and other data that exposure to educational will reduce some of the bugaboo aspects of it, particularly if the exposure is of a favorable and non-threatening kind.

II.B.3. Faculty Attitudes and Participation in Televised Instruction.

In a number of the studies mentioned above, there were dramatic differences in attitude toward television instruction between those who had actually taught courses on television and those who had not. The Penn State report gives what is perhaps the clearest indication of this difference; where only 34% of non-TV teachers would choose television over lectures as a way to handle large enrollments, 74% of the TV teachers said they would use TV in preference to large lecture classes. And, at the end of a year of experimenting with the televised program on the campus, 54% of the TV teachers would choose to send a child to an institution that used TV in preference to one who did not, while only 18% of the non-TV faculty made such a choice.

The more pro-TV attitudes of teachers who actually have taught courses on television raises the question concerning the roots of pro- and anti-TV attitudes. Are those teachers who actually have taught over television the kind of individuals who would naturally be more favorable toward this relatively impersonal and mass production approach to education? Do they belong to what Adelson (1962) has described as the charismatic type of teacher who puts high value on the showmanship approach to teaching? Or perhaps they belong to Adelson's priestly type in that they view teaching as a process of laying out before students the authoritative and documented truth? Neither of whom regards as important the more clinical and personal contact with students. Or are they people who attitudinally endorse educational TV simply because of the fact of their own participation in it? Another possibility is that individuals who have found themselves, for one motive or another, investing large amounts of time in preparing their television presentation must, in order to reduce internal dissonance and to maintain a feeling of consistency, believe that such investment of such great effortmakes sense; therefore, they must say to themselves, educational television has great value. Certainly, we would not expect teachers who do, for whatever reason, spend a great deal of time and effort preparing televised presentations maintain an attitude that this kind of instruction is wrong and useless and destructive of the general goals and proper procedures of liberal education. Or is it a matter of the changing of attitudes simply on the basis of an increased familiarity with the medium and a participation in the introduction of ITV?

On the later point Evans (1962) has furnished some evidence. In his research, a number of faculty members whose attitudes toward television were known, were persuaded to experiment with the medium by recording on television some of their own lectures. On a subsequent test those individuals who had experimented with the actual use of the medium were found to change in a favorable direction in their general attitudes toward its use as an educational procedure. Does familiarity reduce threat? (It clearly does not seem here to produce contempt.) Or are the changes in attitude best accounted for in terms of the faculty member's attempt to reduce his own dissonance by adjusting his attitudes so they are more in line with his activities. There is no clear answer to these questions. It is a plausible guess, however, that mere familiarity with ITV will lead to less hostile attitudes toward it. Reality when it comes is often not as bad as it is imagined to be.

II.B.4. Characteristics of Individual Faculty Members and Orientation to ITV.

It seems reasonable to suppose that the individual teacher's basic orientation to his own role, his general feelings about students, his general commitment to the academic enterprise, and perhaps biased dimensions of his personality, will bear on his readiness to accept or reject technological innovations in general and ITV specifically. Evan's (1962) study furnishes data on this point. He obtained a good deal of information on characteristics and attitudes, not specifically related to ITV, of faculty members. In summary of his findings, Evans presents the following characteristics of the pro-TV faculty member:

1. The pro-TV professor evaluates, more favorably than does his anti-TV colleague, concepts a number of which are removed from his immediate educational realm. For example the pro-TV professors were less highly in favor of hiring Charles Van Doren and took a more tolerant stance on extracurricular life on the campus.

2. The pro-TV professors were less highly in favor of the traditional approaches to instruction; they were less committed to the straight lecture method, less committed to answering student questions in large classes.

3. The pro-TV professor was less "professionalistic" and less academic-centered than was the anti-TV professor. The pro-TV professor showed less exclusive and less pre-eminent concern with the limited academic aspects of his existence.

Evans, in summarizing his data on the pro-ITV professor, characterizes him "as being relatively flexible, mobile and sophisticated in his thinking and teaching. He is interested in a wide range of questions which transcend the boundaries of the university as an institution" (p. 77).

In characterizing the anti-TV professor, Evans describes him as one "who prefers to restrict himself to questions and events revolving more narrowly within the academic framework. He spends more time doing what he thinks he does best--teaching by the traditional methods. To the anti-TV professor questions which have the most intrinsic value are those which concern his relationship to his professional environment" (p. 77).

These results, Evans warns us, are perhaps overdrawn pictures of extreme groups, but they do clearly suggest that faculty attitudes toward ITV involve many dynamic factors other than the basic evidence concerning the educational effectiveness of the medium.

II.B.5. Faculty Views of the Advantages and Disadvantages of ITV.

In a number of studies, the most serious disadvantage of ITV in the eyes of faculty members fell in the area of its general "impersonality". In the Penn State studies (op. cit.), for example, the faculty members, after two years of having ITV on the campus, listed "lack of contact and individual attention" as the leading limitation of ITV. (Twenty-six per cent of them mentioned this disadvantage.) Other limitations, including "no feedback (17%), "impersonal" (14%), "no student questions" (13%) all indicate a great concern with the personal relations between students and teachers. In the study at Miami University (Macomber & Siegel, 1960), 66% of the faculty members listed disadvantages under the general heading of "loss of personal contact, inability of students to discuss and question, inability of instructor to stimulate." The next most frequent objection (11%) concerned "pacing--cannot judge student reaction". This 11% as well as the 10% who said that the experience was "not rewarding for the teacher" might be grouped with the 66% above to elevate the perceived importance of personal contact between teacher and student and to emphasize the faculty's perceived impersonality of televised instruction.

These reactions of faculty members, concentrating as they do on the personal-impersonal factor in televised as compared with conventional instruction, lead to significant questions concerning first, the actual nature and extent of the alleged impersonality of televised instruction, and also, about the genuine educational effectiveness of the personal factor in teacher-student relationships. It is eminently clear that teachers who do not teach on television feel that the medium is very impersonal, that there no personal contact between the instructor on television and the student in class. He also obviously feels that such personal contact is vitally significant for educational effectiveness. Both these questions are amenable to examination through research, and will concern us later.

In none of the studies of faculty attitudes have faculty members shown a tendency to find many advantages in televised instruction. In the Penn State study, after a year of having ITV on the campus, the four most frequently mentioned advantages were: 1) better instruction for more students, 2) it is a good thing to try new methods, 3) it is conducive to better preparation and 4) TV is good education-communication medium. Six per cent of the faculty volunteered a mention of each of these four alleged advantages. In addition to these, 5% of the faculty mentioned that television allowed "more variable situations with visual aids." After that, no more than 3% mentioned any advantage of TV.

In the Miami University study, faculty members were asked questions on the comparative advantages of ITV and large lecture classes. The respondents gave TV an advantage over large lectures only in respect to TV's perceived ability to show demonstrations and experiments more clearly to the student. Although ITV rated below large lectures in every other respect, teachers did mention as potential ITV advantage the potentiality for economy of instruction and the possibility of exposing more students to better instruction.

II.B.6. Teacher Ideas Concerning the Potential Uses of ITV.

In both the Miami University and Pennsylvania State University studies, data were collected on faculty ideas concerning the preferred and the potentially profitable uses of ITV in the educational process. In the Miami study, as we have seen earlier, eleven per cent of the faculty showed "general and unqualified enthusiasm for its use" while exactly the same percentage said "don't use it at all". Twenty-seven per cent said that the medium could be used on the campus for lecture survey or physical science courses. Twelve per cent said that it should be used only for enrichment purposes, another 11% said that it had uses as a visual aid in supplementary instruction, while 14% thought it should not be used on the campus but could be used appropriately in teaching off-campus courses.

In the Oregon study the percentage of faculty in the four institutions saying they either strongly favored or favored the use of inter-institutional ITV for "lower division multi-sectional courses", were respectively 39%, 59%, 61%, and 50%. These figures represent faculty responses to a questionnaire administered after the inter-institutional program had been in operation for two years. Comparable data showed that a somewhat larger percentage of the faculty either strongly favored or favored the use of ITV in introductory survey courses; the percentages for the four institutions were 63%, 59%, 63%, and 58%. There was very much less sentiment for the use of ITV in upper division courses and in graduate seminars. There was a good deal of sentiment, at least as favorable as that for the use of television for introductory survey courses, for the use of television in extension courses. Percentage for the four involved institutions either favoring or strongly favoring the use of ITV in extension courses varied from 44% to 66%.

These figures clearly indicate that television is not seen as a proper medium for the more important and significant learning experiences of students, which faculty members are likely to perceive as occurring in upper division courses, in seminars, and at the graduate level. There is still a great deal of resistance to its use in any kind of course, but for the less important survey courses or for large courses where there is no hope of establishing small group and intimate contact between faculty and students there is a willingness, though perhaps a reluctant one, to consider ITV as a possible mode of procedure.

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II.B.7. Summary of Research Results on Teacher Attitudes.

From the various studies of faculty attitudes toward television, we can see, in summary, that there is by no means a persuasive faculty enthusiasm for this form of educational procedure--except perhaps on the part of instructors who are actively involved in the teaching on TV. In no institution, it is safe to report, does a majority of the faculty express unqualified and enthusiastic approval of ITV as an educational procedure for any kind of course under any kind of circumstance. It is almost universally regarded with suspicion. At best it is seen as a grim but perhaps a necessary compromise, very probably bringing about an inevitable lowering of quality of educational procedures, but a procedure that may have to be taken into consideration under the pressure of increased student enrollment and teacher shortages. Few, if any, faculty members feel that television has advantages for upper division courses or for graduate courses or for those courses where there is a possibility of maintaining the intimacy of contact between teachers and students. By far the most widely expressed concern about TV concerns its impersonality, its insulting of the intimate personal relationship between teachers and students. The only clearly perceived and expressed advantage of TV over conventional methods of instruction in large classes is that TV can make demonstrations and experiments more highly visible to more people. One is led to the interpretation that if the matter of acceptance or rejection of ITV in the educational system were left to faculty decision, even in those institutions where there has been a relatively favorable experience with ITV, the procedures would be either completely rejected or used only in rigidly circumscribed conditions. It needs to be pointed out that few, if any, of the faculty members in any of the institutions where attitudinal studies have been conducted had had, at the time their attitudes were sounded, systematic knowledge of the results of research on the educational effectiveness of ITV. Would access to presently available data, which may be said to show that ITV does not differ significantly in educational effectiveness from conventional forms of instructions, have made a difference? Or, to ask a more pessimistically flavored question, are faculty attitudes so deeply embedded that they are immune to evidence? Along this line one may be inclined to wonder what would have been the reaction of these faculty members whose printed books not now available but were suddenly to appear on the scene. Surely the availability of books has changed enormously the role and function of the teacher. But did teachers of Gutenberg's day resist that technological innovation?

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The Motives, Roles, and Plights of the College Teacher.

There is abundant evidence to support the contention that faculty attitudes toward instructional television are rooted in factors and considerations other than a reading of available research-based evidence concerning the educational effectiveness of the medium. One can argue that if we are going to arrange for this innovation to be assessed on its educational merits, we must understand more than the mere existence of positive and negative attitudes. We must understand something about the bases of these attitudes. We need to know about their human and psychological justification, if we're going to understand ways even to bring about rational discussion of this or any other technological development, this or any other change in established ways of pursuing the academic enterprise.

There has been in the literature no study dealing systematically with the personal characteristics of college teachers, with their roles and their various ways of enacting them, with their motives, their satisfactions, their conflicts, dilemmas, frustrations, aspirations. There have been, however, a number of treatments, such as that of Logan Wilson (1942), Caplow and McGee (1958) and such as those reported in Sanford (1962) that have dealt with the general attributes of the teacher and of the situation in which he finds himself. It may be profitable--or at least provocative--here to summarise such general treatments of the academic man and to supplement the substantive content of these general studies with such psychological hypothese as can be generated from the arm chair of the present writer.

In approaching this matter it may need to be said that the underlying assumptions of the writer hold that any expressed attitude of a teacher, whether the attitude concerns ITV or something else, must be appreciated in terms of the general psychological company it keeps. Attitudes occur in patterns and people have the need for consistency. Also we need to remember that any overt attitude, expressed on a questionnaire or to an interviewer, may have covert content. What an interviewee says is often an edited version of what he would like to say. And one must also take the position that what a person says is sometimes a disguise of latent processes or content and that one needs to make inferences about such covert, unsaid and perhaps unconscious material if he is to interpret meaningfully a pattern of expressed attitudes or opinions. There is ample demonstration in the psychological literature that one must occasionally infer unconscious processes in order to make coherent and parsimonous sense out of observed behavior.

The procedure here will be simply to set down, as general hypotheses, statements about the roles, motives, positions and conflicts of teachers and to comment on the possible relationship between each of these and the teacher's willingness to accept or reject procedural innovations, with particular reference always to instructional television.

1. The teacher occupies a generally inferior social position in the society at large. David Kats (1962) has recently pointed out the relative lowliness of the teacher's over-all social position in the American society. This kind of observation has been made often before. Kats cites Bertram Russell's statement in which the latter compares modern teachers with the highly educated Greek slaves who were required to teach the Imperial Romans. On the same point Logan Wilson (1942) quotes Marten ten Hoor [illegible], "Why is it, I have been asking myself, that in Europe an ordinary mortal, when he sees a professor, tips his hat, whereas in these United States he taps his forehead? Why is it that in Europe the professor is the jewel of the salon while in the United States he is the skeleton at the feast? Why is it that in Europe a professor is a lion who is diligently hunted by the arbiters of society, while in the United States he is as a lone ass braying in the desert? Such startling differences, my friends, cannot be due to accident or caprice, and therefore cannot be safely ignored. In the name of scholarship, and for the sake of the future American professor, they must be examined and, if possible, explained." (p. 148 in Wilson).

What does the teacher's allegedly inferior social position have to do with his readiness to respond favorably to innovations in educational procedures? Perhaps nothing. But, perhaps, again, one can state the general hypothesis that a readiness to explore the novel, to experiment with potentially valuable new approaches, will be a tendency more likely to be found in psychologically and socially secure individuals than in those who are feeling any kind of insecurity. From experimental psychology we know that hungry rats do not explore. Deficits do not lead to adventure, we are inclined to extrapolate, and necessity is not the mother of invention. There is increasing evidence in the general psychological literature to support the kind of formulation that Maslow (1954) gives us, a formulation maintaining exploration and creativity and adventure can occur only after there is a satisfaction of the lower order drives that are centered in physiological, psychological and social deficits.

2. The college teacher is somewhat alienated from social processes. Katz (1962) also points out that teachers accept themselves as being a little alienated from the general stream of life. They have a sense of separateness from the sturm und drang of practical and social affairs. They are familiar with and sometimes are inclined to believe in the adage that "those who do, do; those who can't, teach." Some take pride in their lack of involvement in the affairs of the community or the state or the nation. Others exert considerable and often not very successful efforts to bridge the town-gown chasm, but even those who do join the Country Club and do become Rotarians and who do find themselves spending social time with the leading citizens of the community or the state, are inclined to feel themselves to be social and political eunuchs--they are tolerated, even welcome--in social situations because they are amusing, interesting, sometimes charming, but still always harmless.

Katz (ibid) points out that a possible factor in this general subordinate position in society and in this tendency toward alienation may be the very fact of economic reality. Few professors can afford to pay for either the symbols, the rituals or the realities of belongingness in the higher echelons of the community.

3. The teacher's life is centered in the academic setting. Following from points 1 and 2 above is the related point that teachers tend to lead a relatively encompassed life. Their contacts, their rewards, their threats and their concerns tend to be confined to events on the campus or to events occurring in the world that is limited by their own academic discipline. Since so large a proportion of the rewards, both negotiable and otherwise, of life come from and are limited by the academic setting, teachers have to be deeply involved with every aspect of life on the campus. That's where the rewards are. That's where the competition is. That's where the threats are to be found.

What has all this to do with attitudes toward innovation? Perhaps not much. But Evans ([illegible]) has shown that the deeper the intimate involvement with the norms and structures and procedures of the academic world, the more likely is a teacher to be negative in his attitudes toward instructional TV. Evans' results suggest the general hypothesis that the willingness of a faculty member to explore and to experiment with novel procedures in the academic setting will be positively related to the magnitude of the general scope of his life. For example, one might expect that the independently wealthy faculty member who has an established position in local society and who has achieved a national status in his own profession will, other things being equal, be more tolerant of the idea of technological innovation in the university than will the individual whose life is almost completely absorbed with the rewards and threats of diurnal existence in one department on one campus. All this is not to say that there are not reasons, both highly rational and highly principled, for accepting some innovations and rejecting others. We are dealing here, however, with irrational backgrounds for non-rational acts.

4. The teacher is caught up in a competitive hierarchy. Although there is a frequently encountered stereotype that the fields of academe are walked by a society of calm, secure, inner-directed and scholarly individuals whose primary goals are the advancement and dissemination of knowledge, there is considerable

evidence that the academic structure is conducive to a very high level of competitiveness and to a good deal of jealous and invidious comparison of status and rank.

Logan Wilson (1942) has described this situation as follows:

"Regardless of whether the academic man is in a mor major or a minor university his need for security as well as his institutionally induced ego demands provide the push from within and the pull from without toward socially valued norms. Lip service is given to the impersonal and unselfish advancement of learning, but at the same time keen personal competition is fostered. Unmitigated strains develop in a defective social structure relying upon an increasingly meaningless credo to secure co-operativeness and objectivity. Individually, all of this appears in the necessity for zealously upholding one's status within the local situation and in the national professional group. In brief, the scholar-scientist is competing against all others in his immediate field for status in the wider arena, and also for status among his local colleagues to gain their acclaim and to secure administrative recognition" (p. 172).

5. Teachers are caught up in career patterns that degenerate the role of teaching. In the general academic world, the pattern of rewards and of status put great premium not on teaching, regardless of the lip service given that function, but on other kinds of performances. Katz (1962) points out that most faculty members, whether in small or large institutions, accept as their ego ideal some leading figure or figures in their professional or scholarly or scientific fields, with the "leading" status being defined almost always in terms of written contributions to their own fields. Again Logan Wilson (op. cit.) has observations on this point.

> "In many places today, only a modicum of efficiency is demanded in teaching, and even meritorious achievement in performance seldom brings the prestige awarded for outstanding research. In lesser institutions and on lower levels in leading universities, the teaching function still has a

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primacy over the research function, yet everywhere there is an attitude among the academic elite that dismisses meticulous attention to instruction as a defection from the 'higher' purposes of scholarship and science.

> "Many academicians take their classroom duties seriously and even enthusiastically. Both patient systematizers and brilliant showmen are rewarded by prestige and promotion in the primary group, but it is printed dissemination that is of greater importance in spreading the professor's renown beyond the confines of his own campus. Moreover, the individual who chooses or permits his energies to be directed into other channels to the exclusion of research gives hostages to fortune. The highest prestige values, exclusive of major executive posts, are in the fields of research, and the ambitious professor concentrates his best energies upon this form of activity because it supplies the highest rewards" (p. 188).

The general situation seems to be that individuals in academic positions do accept teaching assignments as a primary part of their official function. The academic job is often defined exclusively in terms of teaching. On this point there is the story about the legislator who asked the university professor how many hours he taught. The answer was 12 hours. The legislator responded, "Well, well, that seems like an honest day's work." The point is that faculty members willingly accept teaching as a vital part of their function. Often they are very conscientious about it, but anyone who does take teaching seriously is likely, at the same time, to regard himself as something of a fool, for he knows that however much his effort or his excellence in teaching, teaching will not butter his bread. It leads neither to income nor to prestige; at least not nearly as predictably as do other patterns of activity. While this is more likely to be true in large and prestigious institutions than in smaller colleges of lower prestige, rewards nowhere are likely to be determined primarily by performance in the classroom.

One can see in this situation the germs of conflict, tension and threat--all factors that can have a direct bearing on the orientation to ITV or to other educational innovations. Take the teacher who is seriously committed to scholarly writing of one kind or another but who still takes his teaching seriously. For him, effort invested in teaching cannot be justified on practical grounds. But the effort is there. And he must explain it to himself in some terms that do not create a feeling of dissonance and foolishness. If he, at the sacrifice of his own career patterns, invests great effort in teaching students, then teaching must be important. He must believe it so. And he easily believes that just the way he's doing it is important. And the way he does it is most often in a face-to-face situation with the smaller and upper-level courses, particularly if he is one who has achieved enough recognition from his writing to be a prestigious member of a faculty. One can make a case that simply because of his high, and always somewhat conflicted, investment of effort in teaching he will be particularly jealous of any infringement of the general satisfaction and disruption of the sense of stability he gets from the combination of this investment with his scholarly work. He will be particularly resistant to any change in the pattern. On the other hand one can easily imagine the less conscientious research-oriented individual who sees in educational television the possibility of the freeing of time for his primary interests in scholarly productivity.

Another possible syndrome is that of the individual who knows the career rules in his field, who still accepts the fact that he is officially being paid for teaching, but who carefully limits the time and effort invested in teaching. He regularly meets his classes but he invests little effort in preparing for them and cares very little about any evidence of his effectiveness as a teacher. He accepts the familiar and easy assumption that if he knows his subject he also is a good teacher. But he may harbor a deep-lying feeling of guilt that he is not working hard enough at what he is being paid for, and it hence may be that any educational innovation that calls attention to teaching or that puts pressure on him to teach more vigorously will stimulate his feelings of guilt and will be

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6. *The teacher goes to class unprepared for communication.* Katz (Op. cit.) has pointed out that teachers repeatedly go to class unprepared, not *in* knowledge but *for* communication. Few if any college teachers have ever had any formal training or have ever been through any formal process of being judged in their competence for teaching. After they've been at the business of teaching for a while, however, they do settle into a routine that seems to work. Whatever they have settled into turns out to have some rewards inherent in it, for students do learn and at least some students will reward almost any kind of faculty performance in class. Almost every teacher, however, faces at least occasional bits of evidence that raise for him grave doubts about his ~~students~~ skill as a teacher. He may present a lecture which he himself thinks is at the peak of excellence but which turns out on later evidence to have left his students cold and to have taught them nothing. At another time, he feels himself to be stumbling and bumbling and to have achieved nothing in class, only to find out later that this was the lecture that most of his students remember long afterward.

The teacher is untrained and unprepared for communication. But what he does in class work~~s~~. And whatever he has settled upon as effective allows him to run his schedule and his career in ways that seem adaptive in the environment. Nevertheless he may still have serious doubts about the adequacy of what he does. Again we find the teacher vulnerably open to threat by innovation. He does not want to hear or to engage in any discussion of teaching. He may privately suspect that any open examination on teaching techniques will turn up deficiencies in his own procedures; and he suspects that remedying these deficiencies will be disruptive to his general pattern of existence. Anyone who has lived through a discussion in a graduate department about the desirability of arranging for Ph.D. candidates some actual course work in teaching or some kind of supervised experience in teaching, has very probably experienced the kind of uneasiness and perhaps even hostility that can be produced by the very idea that teaching is important and that college teachers may learn or be taught something about pedagogical performance. In very few universities in America are there attempts at the graduate level to give any more than cursory attention to the future teaching functions of the Ph.D.'s who are turned out. Not even in psychology, where intensive professional and practical training is given clinical psychologists, are there more than one or two institutions in America in which future teachers of psychology, who may on some grounds be regarded as needing skills at least as intricate and as important as those of the clinician, are given any kind of training or supervised experience in the teaching function. It is just not done. And it is not done, one may guess, because of the same reasons that research on teaching practices at the college level has been pursued with only a fraction of the vigor and the financial backing that is invested in research on techniques in the clinical situation.

7. Teachers show an idol-of-the-cave addiction to the Mark Hopkins'✓ ideal. For many college teachers the ideal teacher-student situation is that in which there is a teacher on one end of a log and a student on the other. In Evans'S (op. cit) study for example, there was a very high evaluation given to the concept of the teacher in the small and intimate class, preferably at an advanced level. Although many teachers, particularly those who find the Shaman approach, as described by Adelson (1962), compatible with their personality and abilities, do not shy away at all from the more dramatic showman-like instruction of large lecture sections, they still in public will express the ideal that small classes with intimate interchange between students and teachers represent the really desirable teaching procedure and the one most certain to advance educational goals. The research-based evidence on the latter point, evidence bearing on the educational effectiveness of small, intimate classroom procedures, is by no means clear. Very clear, by contrast, is the evidence showing a strong publicly stated preference, both among teachers and among students, for the small and informal classroom procedure.

Against such an ideal, any method of instruction likely to bring many students simultaneously into the presence of a teacher will be regarded as of reduced desirability. And, of course, among faculty members generally, there will be no widespread willingness to face up gracefully to prospects of a large influx of students who must be taught in some way that will enormously insult the Mark Hopkins ideal.

8. Teachers vastly overestimate the importance of events occurring in the classroom. Whether an undergraduate teacher in higher education works inordinately hard at his pedagogical tasks or works as little as possible while feeling guilty about his deficiency, he is very likely to overestimate the importance of events that transpire in his classroom. Perhaps this is a good thing if his estimating significance keeps him either working vigorously or feeling guilty when he does not. But in his attempt to make a rational assessment of his own procedures or of any changed way of organizing the collegiate pursuit of education, any misestimator is unfortunate. Teachers nevertheless are likely to overlook the amount that students can and probably do learn outside of class. There are, after all, books and bull sessions, bars and bedrooms. And it is here that both academic learning and personal development may occur. There are not many teachers who will not give at least a mild shudder before rejecting and then forgetting the study of Parsons, Ketcham and Beach (1958) McKendries study ( ) in which a third of the class was invited not to attend lectures but still performed as well as those who attended either a large lecture section or small discussion sections of the same course. In the course of a students week, he spends 3/168 of his time in a regular course. There clearly is ample time for significant experiences--including experiences of direct relevance for a given course in the 165 hours a week that the student is not in class.

There may be useful perspective also in the recognition that the 40 to 50 hours spent in one course in one semester may be too small and too late a segment of experience to make a significant difference in the life of a human individual.

Such dolorous arithmetic should not be taken as a denial that vital events can and do transpire in the college classroom. But to expect that every discussion or every paragraph of crisp exposition will make a unique contribution to the student's development is to base ones efforts on sheer delusion. And to believe that existing procedures are better than any that may be invented is to cultivate intellectual attitudinal paralysis.

The Students' Motives, Plights and Dilemmas

Just as in the case of the teacher, the student's reaction to instructional TV, as to any other educational procedure, can best be understood if we can locate any specific attitudinal reaction in a general social and psychological context. The student is a whole person, with consistent patterns of needs, attitudes and capacities, making his way as best he can in an environment that demands certain things of him and that holds out to him the promise of certain kinds of rewards for his performance. We will not understand the student's enthusiasms, satisfactions, antipathies, reluctancies, his vigorous efforts, his loafing, his involvements with or indifference to intellectual matters, his rapid development or his stasis, his regression to immature patterns, his serious commitments or his indifferences, his successes and failures at meeting the criteria of an educated man until we can understand him as a whole person interacting with other whole persons in a whole environment, an environment that exerts its own pressures, to demand things of him and that administers its rewards and punishments in its own particular way.

In recent years there has been an increased focus of research on the problem of understanding the whole student in the whole college environment. For example, a large proportion of the space in the recently published The American College (1962) is devoted to analyses of student personality, to studies of interaction of students and faculty, and to treatments of the influence of the college environment upon the behavior of the individual student. This growing literature, although it cannot be summarized here, has an obvious relevance for understanding the student's attitudinal orientation to televised instruction. It also bears directly on the more important goal of understanding ways, if any, in which televised instruction can be used to its greatest advantage for the educational development of individual students.

For present purposes we may do well here to state the general hypothesis, well grounded in the research literature, that the individual student's reaction to televised instruction will be intimately related to that student's personal attributes, personal motives and personal ways of interacting with the college environment.

Research efforts designed to bear generally on this hypothesis or to explicate specific relations between student personality and student attitudes toward ITV have been both meager and unrevealing. However, the outcome of research on the more general problem of student personality and academic adjustment is such as to reinstate a concern with personality factors as they bear on the question of attitudes toward televised instruction. And, more significantly, there can be a profitable concern with the notion that a student's personality orientations will have a bearing on the likelihood that he will profit from televised instruction.

Student Attitudes Toward Instructional ITV

There is no available evidence bearing on the extent to which student attitudes influence faculty decisions concerning methods of instruction or any other aspect of operating an institution of higher learning. There cannot be much doubt, however, that faculty estimates of student attitudes and student preferences do have a bearing on decisions made by the faculty and by administrators. In any institution where there is competition with other institutions for undergraduate enrollment and in any institution where there is interdepartmental competition for students or for undergraduate majors, no department is going to choose to adopt procedures which it thinks will be drastically unpopular with students. And of course no individual faculty member wants his own substantive field presented at less than its best in competition with other fields that are in the college catalogue.

Few academic or administrative decisions, however, are based on explicit knowledge of student attitudes toward either educational procedures or toward individual educators. In not many of our institutions of higher learning do we act as if students are the best judges of what is good for them. But anyone who has been involved in committee meetings on curricular matters knows that there is competition among departments and among subject matter fields for the love and affection--and the mere presence--of students; and there is great awareness of the importance of student attitudes. Certainly it is true that most of the studies of ITV programs at institutions of higher learning have spent at least some time and energy in attempting to assess student reactions to the medium in comparing these reactions with those to alternative educational procedures.

In addition to the practical, political and competitive aspects of student attitudes, there are other and more important reasons for finding out how students feel about educational television and about other educational procedures. Students are there, they can and do make observations, they can tell us a good deal, at least indirectly, about the likely effectivenss of various procedures, and they can give us hints about ways in which we can change our procedures not simply to win more favorable student judgment but to bring about a more educationally productive teacher-student relationship. Also, of course, there is the possibility that there is a relationship between students' feelings about a given mode of instruction and their achievement through exposure to it.

In the Oregon Study (Op. cit), students at the various institutions involved in the inter-institutional project were asked, before the project actually got started, to register their general feelings concerning the desirability of televised instruction. The Oregon researchers summarised the results from this study as follows:

"A large majority of the students felt that they would learn as much or more from televised instruction as from conventional instruction. Between 8 per cent and 29 per cent of the respondents in the respective groups felt that they would learn less from television instrustion than from conventional instruction.

"A large majority of the respondents in the respective institutions felt that the quality of televised courses would be the same as or better than conventional courses. From 7 per cent to 16 per cent felt that televised instruction would be inferior in quality to conventional instruction.

"An extremely large majority of the respondents felt that the caliber of professors in television courses would be the same as or better than that in conventional courses. Only 2 per cent to 10 per cent of the respondents felt that the caliber of television professors would be inferior to that of conventional professors.

"A majority of the students felt that attention in televised courses would be the same or better than attention in conventional courses. From ten per cent to 37 per cent of the respondents felt that attention would be worse in a televised course than in a conventional class."

Surely we do not have here any evidence that students, in the absence of direct experience with instructional TV, are inherently opposed to it. As a matter of fact the Oregon data indicate that students, when they consider the matter, look forward with some positive anticipation to the advent of televised instruction. These Oregon students did not seem to concern themselves much about the question of whether the televised program was to originate at their own or at some other institution. They tended to feel that the general quality of the instructor chosen for television would probably be higher, and they seemed to show little institutional loyalty in the matter, in that they expressed themselves as quite willing to attend classes taught by a professor from other than their own institution. In these pre-experimental data, we find students anticipating that inter-institutional TV would give them a wider variety of viewpoints than they would obtain from instructors on their own campus, but they also give frequent expressions of concern that the television procedure is going to be impersonal; they reported some worry that they would not be able to ask questions of their instructors. The general tenor of the opinion was about 2 to 1 in favor of getting ahead with the experimental program.

The Oregon study, the study at Miami University and the study at Pennsylvania State University all give evidence on student attitudes toward ITV after some actual experience with the medium.

At the end of a two year experimental period, the Oregon researchers again investigated student acceptance of the various courses and analysed some of the factors that seemed to be related to student acceptance or rejection of televised instruction. In summary, there was a general decline in student acceptance of a course called "School in American Life", no basic change in acceptance over two years in a course in history, a notable increase over the two year period in acceptance in the course in chemistry, and some gain in acceptance of the course in appreciation of literature. The most dramatic increase in the student acceptance was achieved by the course in chemistry, where changes in acceptance, for the four institutions, were from an original 49 per cent to 71 per cent, from 23 per cent to 54 per cent, from 33 per cent to 71 per cent, and from 40 per cent to 46 per cent.

It was the conclusion of the Oregon research team that the acceptance of a televised course depended on many factors other than the basic fact that it was televised. They point out that there were a number of factors mitigating against student acceptance of television instruction. For example, in spite of their earlier statement that they did not care what institution originated a program, students did accept programs from their own institutions more readily than those originated at other institutions.

Certainly we cannot say that there was any systematic disillusionment on the part of the students with the televised courses. Faculty members at a number of the institutions involved, however, seemed to think that students were becoming disillusioned. At one institution, 64 per cent of the faculty originally thought that students would either favor or strongly favor TV teaching. At the end of two years no single faculty member thought that the students would favor or strongly favor the procedure. At the second institution, comparable percentages dropped from 37 to 26, at a third institution from 46 to 36, at a fourth, from 14 to 7. Thus while students' attitudes remained fairly stable and favorable over a two-year period, ~~but~~ their teachers were convinced that students were liking TV less and less.

Data on the over-all level of student acceptance in the Miami study were gathered only at the end of the experimental period. The data from that study generally indicate a student preference for conventional instruction over TV instruction, but there were a number of notable exceptions. It was the conclusion of the Miami research team that the television instructor himself was a significant factor in determining acceptance, and that a high motivation of the students, as indicated by a great interest in the subject matter contributed to high acceptance.

In these data also there is evidence to support the conclusion that students generally prefer small class instruction to large less instruction, with the amount of the preference for the small class over large class about the same as that for conventional instruction over televised instruction.

In a number of studies of student attitudes toward various forms of instruction there is a basic limitation imposed by the fact that students frequently are comparing an actual experience with an imagined one. If the student has never had a televised course, particularly if he has never had one given by this particular instructor, he is comparing this experience in the face-to-face situation with a TV experience which he has not had but can only imagine. He can either idealize the absent experience or make it into a monstrous thing. There is a good deal of evidence from both the Oregon and the Miami studies that a student's rating of a televised course or of a large lecture course is generally an over-all rating based 1) on the favorableness of his total experience, and 2) on his comparison of the general favorableness of that experience with the experience he imagines he might have had in some other teaching situation.

The researchers at Pennsylvania State University overcame this disadvantage and also succeeded in getting beyond the limitations of merely verbal data in their estimates of student acceptance of televised as compared to conventional television. The procedure followed there was one in which students were actually given instruction via television for a period, then instruction by the same instructor in a lecture situation, and were then given an actual choice as to which form of instruction they preferred for the remainder of the semester. In such an approach, the order of conventional or televised instruction could be experimentally controlled. So could the size of the room in which the televised presentations were seen; and there could be tabulation not only of verbally expressed opinions but also of actual choices that were made and acted on.

In line with this procedure, one study involved a large number of students who took a course in chemistry and were randomly assigned to two groups, one taught directly in a large demonstration hall and the other taught over television in ~~the~~ Five TV classrooms. This arrangement continued for four weeks until the first achievement test. At the beginning of the fifth week those students who had been taught directly in the lecture hall were randomly assigned to the five TV classrooms, while those who had received instruction over television in the five TV classrooms were randomized in three sub-groups and assigned seats in the lecture hall, some of them being placed in what were presumed to be advantageous seats, some in less advantageous seats. At the end of 8 weeks, all students in both sections had experienced four weeks of direct and four weeks of televised instruction in two different orders. At the beginning of the ninth week all students in the two sections were assembled in a large lecture demonstration hall at successive hours. The students were randomly assigned to seats and notified of their assignments by means of a posted seating chart. The first lecture of the ninth week was given without any announcement about seating plans or other procedures to come. The TV system was not in operation. On the second lecture of the ninth week, the instructor announced that any member of either section who wished to do so could move to a TV class room at the beginning of the next lecture. The announcement was repeated on two successive lecture sections. When the time for choice actually came, it was announced that those remaining in the lecture demonstration hall would remain for the rest of the semester in their assigned seats regardless of their location. A total of 32 per cent of all students preferred televised instruction strong enough to leave the large class and to go back to one of the smaller TV classrooms. However, this percentage rose appreciably for students seated in more than 12 rows from the lecture. For these the figure was 52 per cent for one section and 42 per cent for another.

When similar procedures were followed for a course in business law, 42 per cent of the students favored televised instruction. For a course in political science, 70 per cent chose televised instruction. (In this connection it is particularly interesting that on a questionnaire designed to get a verbally expressed attitude toward television, only 52 per cent expressed a preference for televised instruction.) For a course in general psychology, of students who had experience with both forms of instruction and the opportunity to choose between them, 61 per cent chose and later received televised instruction. The figure of 61 per cent rose to 66 per cent for those students who originally received TV in small rooms; this figure compares with 56 per cent of those students who originally received the TV in large rooms. For this course in psychology, the percentage choosing televised instruction was somewhat less for those students who had been exposed to televised instruction in which the teacher used only lecture blackboard procedures rather than more elaborate visual procedures in teaching his televised course. Here the total choosing televised, as contrasted to lecture (direct) instruction, was 56 per cent.

These results from the Penn State study make two clear points that should not be ignored in assessing any data from any study on student reactions to televised instruction. The first is the individual students who state their preferences need to have personal experience on which to base their preferences; they need an actual opportunity to make an actual comparison of televised and direct instruction. Otherwise their reactions to televised instruction, when there is no directly experienced basis for comparison, are likely to represent a comparison between televised instruction and what they imagine as some kind of ideal instruction. The second point is that what students say about their feelings for television instruction will not necessarily determine what they will do when realistic choice is faced. In the Penn State project, when verbal preferences and behavioral preferences were recorded for the same group, the correlation between the two preferences was only .46. Such a figure does not allow very much accuracy of prediction from verbally stated attitudes to the actual behavior of students when given a choice.

Also the data seem to indicate that when television is used in such a way as to maximise its inherent potentiality—used so that the student can see very clearly everything that transpires on the screen, and used also with the kinds of visual aids for which the medium is adapted, there is an appreciable increase in student preferences for it over conventional forms of instruction.

Students' Reasons for Positive and Negative Attitudes Toward Television.

In almost every case where students have been asked reasons for their negative attitudes toward television or asked what are the disadvantages of television, they cite the matter of impersonality and point out that they cannot ask questions of the instructor in class. So we see that students as well as instructors want the intimate and personal touch--or at least say they do. We have seen earlier, that when the class seems to be a successful one and when students feel they are learning, they lose their concern for the personal touch with the instructor. Data from the Miami Study are in line with such an assertion; students' attitudes toward TV instruction tend to be similar to their attitudes toward the particular TV instructor. In the Oregon study, when students were asked reasons for their positive or negative orientations to television there was some statement of discontent with the fact that one instructor presented the televised portions of the class while another handled the non-televised section and that having to adjust to the two instructors was a strain. There was still concern with the "impersonality" of the televised procedure and with the inability to ask questions while they were on the tip of the mind. But the general tenor of students' reactions was favorable to television. A majority of the students in all but one of the courses estimated that televised lectures were as good as or better than lectures in conventionally taught courses. A majority of the students in all courses except one estimated that standards of student achievement in a television course were as good as or better than standards of student achievement in conventional courses. A large majority of the students in all courses, again with the exception of one, estimated that the quality of teaching standards in televised instruction was a good as or better than the conventional instruction. A majority of the students felt that television instruction was as good as or better than conventional instruction in stimulating discussion. A large majority of the students in all courses reported that the use of visual aids in televised instruction was as good as or better than in conventional instruction.

The Miami study reveals a similar student concern with the lack of personal contact with the instructor, the students' felt conviction that the presence of a proctor or discussion under TV did not remedy this lack. ~~and the~~ There was a widespread feeling that the inability to raise questions as they occur was a serious disadvantage to television. The Miami people found that students were somewhat more outspoken in their criticisms of TV courses than of large lecture courses and it was their notion that this was probably due to the fact that students perceived the television experiment as a "plot" whereby the university planned to save money on instructors.

In the Miami study, the most favorable aspects of televised instruction, in the eyes of the students, concerned the televised use of visual aids, ~~the~~ presentation ~~of~~ in such a way ~~in which~~ that the taking of good notes was facilitated, the general comprehension and understanding of material and the organization of material presented during the class hour. The lowest rated attribute in the eyes of the Miami students concerned the lack of provision of opportunities for raising questions and making comments on the course. (Actually the television instructors at Miami, after studying these student comments on the first year of televised courses, took them into account sufficiently to increase the student ratings on almost every one of these matters in a way more favorable to television during the second year of the given courses.)

Stability of Student Reaction.

Are students more likely to be more favorable to television when it is a new experience and then to fall off in enthusiasm as it becomes "old hat"? There are data bearing on this point, and they indicate that there are no violent swings in attitude that can be attributed to the novelty effect, not, at least, if the measure is taken at the end of the first semester and again at the end of the second semester. On one special study at Oregon, a group of 231 students were selected from three different courses and their attitudes toward televised instruction measured at the end of the first semester and again at the end of the second. The two mean attitude scores were identical. These data do not demonstrate that there may not be a novelty effect if the first measure is taken earlier.

But if there is a disenchantment with televised instruction, it does not increase from the end of the first semester to the end of the second for the same students. From the Miami study, however, there comes evidence that attitudes tend to become somewhat more negative from the beginning to the end of a single semester. There was evidence earlier that attitudes about different aspects of televised instruction can be changed by instructor's deliberate efforts to remedy students' justifiable complaints.

Student Acceptance as It Varies with Individual Attributes of Students.

There have been some attempts to determine whether or not the acceptance or rejection of televised instruction on the part of a student is related either with his general academic aptitude or with personality characteristics. On both points, the evidence seems to be negative. In the Oregon study, for example, an analysis of 109 cases yielded a correlation between attitudes toward inter-institutional television on one hand and scholastic aptitude on the other of .009. Such an inconsequential relationship seems to indicate fairly clearly that scholastic aptitude is not basically related to attitude toward televised instruction. The Miami study, on the other hand, found some tendencies for high ability students in some courses to be more negatively inclined toward TV. This negative relationship was particularly present in two science courses where there was heavy reliance on visualization as an integral part of the TV presentation. The Miami researchers point out, however, that the data for the remaining TV courses was varible, including at least one instance in which the high ability students were more positively inclined toward the course than were students of low ability.

There are no extensive data on sex differences on attitudes toward TV, but the Oregon study reports some data indicating that female students are a little more positively inclined toward ITV than are male students. On the matter of personality traits and attitude toward TV there have been few if any demonstrated relationships. In the Miami study the Edwards Personal Preference Scale was administered to a sample of students in the experimental sections of four

[redacted]

courses and correlations between scores on this test and the attitude toward the courses were computed. This analysis yielded data indicating that the variables of achievement and aggression might have some significant relationship with attitudes toward various forms of instruction, but none of the sub-variables of the Edwards PPI instrument yielded correlations with attitudes toward televised instruction.

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II F Dimensions of Teacher-Student Relationship

The present study will explore at least tentatively into personality factors in the student that seem to bear on his reaction to televised instruction, just as it will explore into the general attributes of faculty members as these relate to willingness to accept or explore ITV. Perhaps the best way here to set a background for the kinds of considerations that seem most relevant and most likely to yeild eventually testable hypotheses, is to set down some general observations concerning the kinds of teacher-student relationships that do seem to get established in academic settings. Or perhaps it's better to think in terms of dimensions of the teacher-student relationship; for in any class the relationship that gets established between an individual student and an individual teacher seems to have many dimensions, with these dimensions changing over time or as examinations draw near or as the teacher and student become better acquainted with one another, or as the student develops toward greater maturity. It seems reasonable to expect that some teachers desire a certain kind of persisting relationship with all of their students. For example, the teacher who seems addicted to a show of his power through demonstrations of his authoritative knowledge will be likely to prefer rather strongly a relationship in which he is the giver of straight forward knowledge while the student remains a passive and obedient and attentive receiver of such knowledge. And, along the same line, it seems likely that the teacher described by Adelson (1962) as the "mystical healer" will wish a warm clinical relationship wherein he ministers help to a relatively receptive and dependent student, who he may or may not wish to grow into such maturity that no help is needed. Both of these kinds of teachers can, of course, find students who will engage quite happily in the kind of symbiosis that the teacher desires.

On the general point that we need to think in terms of dimensions of teacher-student relationships rather than types, we can make the specific point here that almost any teacher has some of the authoritative giver of truth in him as well as some of the desire to heal wounds, to minister to the helpless. And in the case of any given teacher we could probably, if we knew how, study the relationships he establishes with the students and give some kind of quantitative assessment to the relative importance of these two dimensions. But there are also other dimensions that one may observe in the teacher-student relationship as it gets established in academic settings. It may be profitable to list not only the two dimensions described above but others that seem to occur and that seem to have a potential bearing on both faculty and student feelings about educational television and other forms of pedagogical procedure.

Authoritative Passive

1. The Giver of Truth and the Receiver of Truth. This dimension was mentioned above. It need not be elaborated further.
2. The Clinical Healer and the Troubled Child. This dimension is also mentioned above.

One would expect to find this dimension characterizing the relationship between younger students and their teachers more than it characterizes relationships between upper classmen and their teachers. Freshmen are often very frightened when they come to college, are accustomed to what is often a gentle patient-doctor relationship with their high school teachers and, when cast into stiffer competition in a much larger world, they do get themselves into both emotional and academic difficulties. They need help. And in their need for help they will strongly prefer teachers who can give them reassurance, encouragement, comfort, and the sort of directive personal guidance that enables them to survive in a tough environment. Such students cannot be expected initially to establish what most educators would regard as a desirable relationship with the teacher. They have personal deficits which must be met before they are in a condition to rise to higher level considerations and concerns. We can state the ~~pre~~ hypothesis that students who are insecure about their personal worth, unsure about their role and status in the college or are frightened about their capacity to meet college standards, will strongly prefer the healing instructor who can deal with them in a face-to-face situation; they will have strongly negative attitudes toward televised instruction, where the teacher cannot give them their diurnal doses of comfort, of encouragement, of personal understanding, of directive counsel. Perhaps this dimension can be more adequately described as the relationship between the powerfully benign father and the helpless child.

3. The Showman and the Audience. We have seen earlier that Adelson has described the "showman" approach that seems to characterize some teachers. The point here is that almost any teacher has some of the showman--the "ham"--in him and that he will work to establish a relationship in which he amuses or impresses or deeply--or even hypothetically--interests his students. He will find students who will join him in this relationship. Few students mind being amused or entertained in class. Some, however, can be depended on to criticize and to withdraw from the teacher who spends too much of his time in showmanship and too little interesting intellectual challenge.

4. The Martinet and the Obedient, or Rebellious Individual. Some teachers seem to regard it as very important that they have complete and regular attendance in class and at least the appearance of complete and absorbed attention while class is in progress. Such teachers seem to enjoy the power of the martinet and to welcome evidence that students really are somewhat frightened of them and are being controlled--naturally for their own good--by him, the teacher. Such a teacher will find compatible--though perhaps basically uneasy--symbiotic relationships with a number of students. Students often do feel that they need discipline, that they need stern direction, and they will feel that they are thriving under someone who makes them get their work done in spite of their flagging wills. But there seems to be good reason to believe, from the general psychological literature, that such students will show, along with their superficial deference and obedience an accompanying tendency toward rebelliousness. The stern parent may be verbally admired but unconsciously hated. The stern teacher is ridiculed when his back is safely turned.

5. The Judge and the Judged. With our currently accepted procedures for assessing the performance of students, the teacher rarely or never can escape the role of judge. He may wish to join his students in scholarly collaboration, he may wish to establish a brotherly relationship with them, he may wish to work toward student-centered procedures wherein the students themselves accept responsibility for the conduct of their own education; but many of these inclinations are very likely to be thwarted by the fact that the teacher must eventually and inexorably assume the black robes of the grade-giving judge.

This judge-accused dimension is perhaps never entirely absent from any teacher-student relationship. For some teachers in their relations with some students, however, it seems to be the paramount dimension. Some teachers enjoy the power inherent in the pass-fail decision and seem to enjoy administering the threat of very difficult examinations. Many students accept the reality of this power and in their general orientation to the educational process focus their efforts on the extrinsic achievements represented by high examination scores. They are likely to be less interested in ideas per se and more interested in hints about which ideas they must master in order to pass the examination. These students are less likely to lose themselves in content, more likely to "learn the professor." They are likely to come by great skill at predicting the kinds of things the teacher will ask on examinations, and occasionally will exert considerably skill on influencing the judge. They become as well acquainted as they dare with the judge. They give him what evidence they can that they are very attentive and serious-minded students. They ask questions in class, not so much to get answers but as to make an impression on the individual who will be awarding the course grades.

It is a reasonable hypothesis that neither faculty members nor students who accept the judge-accused relationship will look with favor on televised instruction. Certainly the students who need to study the teacher, who learn his biases more readily than they learn his ideas, who are accustomed to becoming acquainted with their instructors for the primary purpose of influencing the judgment of their instructors,--these students are not going to take kindly to a teaching procedure where there are no opportunities to establish the desired personal contact with the judge. They are not happy with an arrangement where they have to plead their case solely on the basis of objective performance. Their social skills, their charm, their good looks, their conspicuous obedience and attentiveness, is all lost on an instructor who is not in class in person.

6. The Older Scholar and His Younger Collaborator.

For many educators, and also for many students who have made a commitment to the scholarly enterprise, the ideal teacher-student relationship is one in which there is a joint pursuit of learning. It does sometimes happen, particularly in the case of more advanced students, that the teacher and the student do work together, with no thought of status, little concern for grades, no consideration of power and dependence. In such situations, both the teacher and the student can be full persons and their relationship is of a kind both highly mature and highly conducive to the growth of each. Certainly those individuals, whether teachers or students, who desire the kind of relationship in which whole people pursue together the whole truth will have great skepticism and perhaps outright hostility to televised instruction and also to large class procedures. They want and need the personal touch, the many-faceted relationship, that is conducive both to personal satisfaction and to the advancement of scholarship. And such a relationship can very probably never be achieved either in large classes or with televised instruction. At least not while the formal instruction is in process.

7. The Coach and the Player.

Some teacher-student relationships seem adequately described as primarily that of the coach working with a player. The coach, who is not going to enter the game of life, who's not going to do the achieving, gives of his best in order to have the player, the student, perform at a high and satisfying level. In this relationship, the coach accepts the likelihood that he will, if successful, work himself out of a job. The dependency on the part of the student is of a short duration and the teacher looks forward to its early termination. The coach may cajole, may reinforce, may punish. But he does all of this in what seems to be a genuine interest in the growth toward skilled independence on the part of the student.

Can such coach-player relationships be established through educational television? Perhaps so, for the relationship depends more on the motivations and skills of the instructor than it does on the personal face-to-face application of these motivations and skills. How many students can a good coach coach all at once? Does a good coach have to be physically present. Must he personally mete out bits of reward and punishment for individual performance? Or does the good coach succeed in having the players seek and achieve implicit rewards that come from good and skilled performance? If the aim of the educator is to have the individual pursue learning, to seek continuing development of personal resources, then it is possible to maintain that he had best work to have the student learn to pay attention to the self-administerable rewards that come from learning and from personal development. Along this line one might make the case that books have an educational advantage over teachers, in that when the student confronts a book he is free of either personal or social pressures and can pursue his own line of inquiry in a way that is determined by his own personal needs and inclinations. Some of this freedom from immediate social pressures may be there also for the student in a televised class.

8. The Teaching Machine and the Lever Puller.

Some teachers, particularly those who put great weight on the importance of learning factual material, act at least sometimes as if they were animated teaching machines. They concentrate on having students give right answers to explicit questions and to the rewarding of those right answers. Of course before the teaching machine conducts its test, through a written or even recitative procedure, it must spend some time dishing out the information about which tests are to be conducted. But the teacher's main function sometimes appears to be that of eliciting correct answers and to rewarding correct answers when they occur. In some subject matters, such a procedure is more adaptive than in others. In some courses and in some subjects there needs to be an emphasis on the learning--even the rote learning--of factual material. For simple matters of educational achievement, such a teacher may be easily replaced by any one of a number of forms of mechanized instruction, but if the satisfactions for both teacher and student come from the personal administration of positive and negative reinforcements, both teachers and students will resist any movement toward automation or toward impersonality.

Such bald statements concerning dimensions of the teacher-student relationship have, of course, little demonstrable virtue. They do seem to be in general consonance with the research literature on personality interactions in the academic setting. And it does seem possible that these baldly stated declarative sentences can be reduced to the form of testable hypotheses. When we come to the presentation and interpretations of the findings of the present study, several of these considerations will come again to the fore as possible hypotheses for the interpretation of obtained results.

Institutional and Administrative Factors in Orientation to Instructional TV.

On many grounds one would expect that institutions will differ considerably in their willingness to experiment with or to use instructional TV. And one would likewise expect that if there were a number of educational institutions essentially the same in general structure and organisation, the administrative procedures employed to make decisions about the use of instructional TV would have a bearing also on the general orientation toward the medium at that institution. There has, however, been no systematic research on such matters.

There is available some evidence that the faculties of various institutions differ quite significantly in their willingness to examine and explore the uses of instructional TV. While there are no comparable data from the three studies cited most frequently in the present report, the report from Oregon does give comparative data from the four institutions involved in the inter-institutional network there. For example, when faculty members were asked, at the end of a two-year period, to state their feelings about the future of instructional TV, the percentages at the four institutions who said that it was either excellent or a pretty good approach to teaching varied from 75% to 42%. When asked about their reaction to the idea that they themselves would teach by television, the percentage of faculty members on the four campuses who either liked the idea or liked it very much varied initially from 42 to 24 per cent, and terminally from 26 to 15 per cent; and when asked, at the beginning of the project, whether TV will have or has had an effect on the quality of education, the faculty members saying that ITV would improve or greatly improve instruction varied from 35% at one institution to 18% at another. At the end of the two year period these percentages varied from 13% to 4%.

Both before and after the two year project was undertaken in Oregon, the most favorable acceptance came from the three state institutions involved in the study. The relatively small private university participating in the project did not either initially or terminally demonstrate nearly so favorable a reaction to the whole idea. One factor here is perhaps the reality that the three state institutions constituted a more or less unified system of colleges and were accustomed to working together. These three institutions ~~has~~ have a single executive officer and a single board of regents and ~~had~~ have had a history of some amount of cooperative endeavor. The private institution, one has the impression, remained an outsider and never felt at home in the collaborative effort here. At least the faculty members did not.

Student attitudes, both before and after the two year period, showed similar degrees of variation from one ~~institution~~ institution to another. Generally speaking, student attitudes, both initially and terminally, were more favorable than faculty attitudes, but they did vary significantly from institution to institution. For example, the pre-experimental attitudes of chemistry students toward inter-institutional TV showed acceptance scores that varied from 53 per cent at one institution to 27 per cent at another. And similar data on other courses showed similar ranges of variation. In these pre-experimental studies, students did not seem to indicate any concern about which of the four institutions would originate which courses. In other words, there seemed to be no institutional loyalty involved in their attitudes. In actuality, there was more optimism about inter-institutional television than about intra-institutional television. At the end of the project, there remained ~~institutional~~ institutional differences in student acceptance of ITV. For the students in the chemistry course, the percentage who demonstrated accepting attitudes varied from 80 per cent at one institution to 53 per cent at another. (Incidentally, the negative faculty attitudes at the private university involved in the Oregon study did not seem to be wholly transmitted to students. For example in reacting to the chemistry course 57 per cent of the students in one semester and 54 per cent in another demonstrated acceptance. And while the faculty willingness to have ITV on the campus was diminishing significantly over the two year period, the students in the chemistry course on the same campus ~~are~~ were demonstrating increased acceptance of it, with the percentage rising from an initial 40 per cent to a terminal 46 per cent.) In spite of the students' initial report that they didn't care what institutions originated televised programs, the terminal attitudes were generally a bit more favorable toward courses that originated in the students' own institution.

These data were not related in the study to any characteristics of the institutions or to the administrative procedures involved in the decision to join in with the experimental program. One is led to the hypothesis that the small private university, existing in a generally different kind of academic environment and adhering more firmly to the tradition and the practice of restricting enrollments and of conducting small classes with relatively intimate teacher-student relationships, was not faced with the likelihood of vastly increasing enrollments and hence would be less favorably disposed toward instructional TV procedures.

The study revealed that both faculty and students had preferences as to which institution should originate courses. Generally speaking, students and faculty were more favorable toward courses originating on their own campus. But if courses were to be originated on other campuses, there seemed to be some indication that the larger and more prestigeous institutions were preferred as originators of televised instruction. A revealing bit of data lies in the fact that at the beginning of the study 65 per cent of the faculty members at the state college of education were willing to receive courses from the state university whereas only 12 per cent of the faculty members at the state university favored the importation of courses from the state college of education. Relatively few of the faculty at any of the state institutions wished to import courses from the private university in the network, while the faculty at the private university reciprocated by being relatively unwilling to import courses from any of the three state institutions.

The study gives no data on the general attitudes toward ITV of the administrative officers at various institutions.

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III.A. FACULTY MONITORS' REACTIONS TO TEMP EXPERIENCE.

Introduction

In January 1962, during the last two weeks of the first full semester of TEMP programs, each monitoring instructor around the network was sent a questionnaire eliciting his thoughts and feelings about some aspects of educational television and about the course with which he was concerned. The full questionnaire (presented in Appendix A) asked the instructor to report his thoughts and attitudes on a number of aspects of his own institution, of his own department, of his own concept of himself and his professional role, of the specific course he monitored. He was also asked to make a number of comparisons between the lecture method and the televised method of presentation. In seeking data on all these matters, the technique employed was an adaptation of that developed by Osgood et al (1957) for dealing with what they termed the semantic differential. For our purposes the technique, asking the respondent to make marks on a number of lines each of which connected words that defined a bipolar continuum (e.g., good ——— bad), with the location of the mark indicative of the strength and direction of feeling on the given continuum, as that continuum bears on the particular concept being scrutinised. (See Appendix). For example on the good – bad continuum as it applies to educational TV, a mark could be placed anywhere from good, through neutral, to bad. It was felt that this procedure yields a relatively great amount of attitudinal data per unit of time and also that the feelings expressed through this procedure are likely to be relatively less edited and more free than feelings expressed more explicitly.

The questionnaire was introduced by the following paragraphs:

TO: TEMP Instructors

Introduction

The research staff of TEMP would appreciate it very much if you would take the 30 minutes or so to complete the accompanying forms thereby making what may be a significant contribution to the understanding of the strengths and weaknesses of the televised instructional program.

As you may know, there has been and will continue to be an attempt to make a systematic study of the factors contributing to the acceptance and the effectiveness of the TEMP program. It is readily apparent that institutions, departments, individual instructors and individual students all differ in their reactions to the TEMP program and to televised instruction in general. The research project is designed to assess some of these differences and to explore for factors contributing to them. You are requested to contribute to this study by completing the attached forms, designed to gather comparable information from all who have served as classroom instructors in the various televised courses during the first semester of 1961-62.

The relatively novel instrument presented here has grown out of the exploratory use of such devices with both faculty and students in a limited number of institutions. Also, the specific content of the various items represents an attempt to test hypotheses growing out of fairly extensive preliminary interviewing of those concerned with the TEMP program.

Security of Information

There may be perfectly good and understandable reasons why you will want your responses on these forms treated with proper security. We give you our assurance that the results will not be used so as to embarrass an individual, a department, or an institution. To decrease the likelihood of any such embarrassment, each form has for each institution, a coded designation that will be known only to you and the research staff. Also, you are asked to choose for yourself a "code name" and to write this pseudonym in the indicated places. The purpose of this procedure is to maintain security while at the same time enabling us to collate these papers with brief follow-up forms we may ask you to complete later. So please choose a code name which you will remember for possible later use.

Instructions

Instructions for completing the forms are presented at the beginning of each sub-section of the instrument. Please complete the face-data sheet first.

Copies of the questionnaire reached each of the 64 instructors who served as monitors on the various campuses for one or more sections of a televised course. In most cases, the monitoring instructor sat in class during his televised presentations each week, later conducted a third hour of lecture or discussion and then handled quizzes and examinations. A total of 55 questionnaires were returned. Of that number, 51 were sufficiently completed to be tabulated and used in the following analyses. Procedures designed to assure anonymity for the respondents also prevented any precise analysis of bias in the returned sample of questionnaires, but through records of postmarks and other cues it did become possible to gain reasonable assurance that there was no monstrous bias showing up in the sample returned. All participating institutions were represented. So were all televised courses, with sample frequencies essentially proportional to population frequencies.

In the following figures, data that are presented most frequently appear in terms of the arithmetic mean for the marks on each scaled continuum under each of the concepts, with each of the continuum so divided as to constitute a 7 point scale, with scale scores varying from 1 through a neutral 4 to 7.

There are no data reported here on the instructors' observations of their institutions or of their departments. The collected data on these items, because both the institutions and departments vary so obviously and because so few instructors report on any one institution or department, are not meaningful and are not reported. The data that are reported must also be taken with a grain of salt. The sample is small, the topics dealt with may be relatively emotional ones, and questionnaire data can never be regarded as completely adequate descriptions either of reality or even of feelings about reality. They can still be of value, however, we shall see.

III.A.1. Teachers' View of Themselves.

Data in Figure 1A bear on the kind of general role and orientation that maintains among the TEMP teachers who monitor the televised programs. These data represent the teachers' relatively quick and unedited reporting of their own perception of their own roles.

A full appreciation of such attitudinal data may be forwarded by the factual knowledge that the sample of 51 usable questionnaires contained 15 teachers with the Ph.D. and 37 without, 10 from the large state university and 41 from the other 10 institutions, and 42 who were full-time teachers, and 9 who were part time.

It is clear from data in Figure 1A that our 51 faculty members perceive themselves primarily as teachers rather than as researchers or administrators. Our group tends to believe that a close teacher-student relationship is very important and they report that they spend a great deal of time preparing for each class. They see themselves as relatively concerned for students' opinion of their courses, and, consonantly, they think their courses should be adapted to student's needs. As a group they tend to think there is need for a relatively great amount of quizzing of students and, to a lesser degree, think that students need a good deal of guidance. There is relatively high agreement that the most important functions of a teacher are a) promoting thought rather than merely covering content and b) stimulating interest rather than covering material.

Though we have no base-line data with which to compare these responses of our sample of teachers, it seems very clear that we do not have here a group of research-oriented individuals who regard teaching as a secondary and onerous chore. Nor are our faculty members investing primary effort in the administration of academic affairs. They see themselves as teachers;

they see the teacher's function as a personal and intimate one, and, one is inclined to say, they see the student as a relatively immature individual who needs a relatively frequent quizzing and a good deal of guidance.

There were a number of responses one might make to the appearance in our data here of an almost stereotypically idealized picture of the college teacher—a picture existing in the teacher's own self concept. First off it seems almost inevitable that these teachers are going to dislike any approach to teaching that disrupts a personal, perhaps intimate, relationship with students. And, secondly, one is inclined immediately to worry about the future logistics of teacher-student arrangements as there are more and more students and relatively fewer and fewer qualified teachers. The Mr. Chips syndrome, the idealized, personally intimate teacher-student relationship, holds forth no logistic hope.

A further observation is that, on the basis of such evidence cited earlier in the present report, there is no evidence that the more personal teacher-student relationship leads either to increased academic achievement or to an advance in personal development on the part of the student. No one will doubt that such a relationship can be tremendously beneficial to the student. Few will doubt, either, that a personal relationship between teacher and student under some circumstances—and in the case of some teachers—can stultify the student's development. Before we can, on evidence, make meaningful statements about the more personal teacher-student relationship we need to know a great deal more than that the relationship is personal. What are the true and functional dimensions of the relationship (cf, Section) and what kind of personal relationship is most conducive to the growth and to the intellectual achievement of those who participate in it?

An additional point that can be made here is that our 51 teachers very probably have not had any experience with any interpretation of the college teacher's role other than the one they report upon here. They very probably teach just as they were taught. The pedagogical role they play is an ingrained and traditional one. Neither in their academic training nor in their professional experience has there been any pressure--or even an opportunity--to experiment with alternative ways of enacting the teacher's role, or to seek alternative routes to the satisfaction that can come from teaching. There will be no alternative procedure found, no experimentation, no attempts, through new approaches, to enhance the intrinsic rewards of teaching as long as all teachers already "know" how to approach their roles and as long as our institutions of higher learning fail to encourage departures from the traditional. It has been observed that our institutions of higher learning, more so than many other established segments of our society, are "hotbeds of tradition."

Not all teachers are equally committed to what here seems to be the prevailing view of the teacher's role. We may well keep in mind the hypothesis that those who are most committed to this relatively intimate, person-to-person and perhaps avuncular kind of view of the teacher's role are logically and psychologically most opposed to the televised instruction. This is a matter we can investigate a bit later.

Figure 1A

[illegible] Monitoring [illegible] Members
[illegible] Perception [illegible]

No.		Mean		
49	Teaching	1.8	Research	Your own most important role as a staff member
50.	Administration	6.2	Teaching	Your most important role as a staff member
51.	Research	3.2	Administration	Your most important role as a staff member
52.	Formal lecture	4.0	Discussion leader	Teaching style most desirable to you
53.	Provoke thought	2.5	Cover content	Your most important function as a teacher
54.	Stimulate interest in subject	2.3	Cover content	Your most important function as a teacher
55.	A great deal	2.5	Very little	Amount of time you give to preparing for each class
56.	Small	3.2	Large	Size of class you prefer
57.	Advanced	3.4	Introductory	Level of courses you prefer to teach
58.	Poor	4.6	Excellent	Your own quality of teaching
59.	Very important	2.9	Unimportant	You believe a close teacher student relationship is
60.	Little	4.1	Most	Total time you devote to teaching
61.	Little	2.7	Most	Total time you devote to research

The marks and figures on each bipolar scale represent the arithmetic mean obtained by treating each continuum on a 7 point scale.

You Yourself

62. Little ______ 3.1 ______ Most
Total time you devote to other activities

63. Much ______ 3.4 ______ Little
Amount of guidance you believe is necessary for students

64. A lot ______ 3.1 ______ Little
Amount of quizzing of students you feel is necessary

65. Little ______ 3.5 ______ Great
You believe the importance of workbooks, outlines, etc is

66. Much ______ 2.9 ______ Little
How much you think courses should be adapted to students' needs

67. A lot ______ 2.9 ______ None
Your concern for students' opinions of your courses

III.A.2. Teacher's Reactions to Specific TV Courses.

The material in ~~the~~ Figure 1B bears on the teachers' general reaction to the specific course with which each of them was concerned. There is here high agreement that the TV instructors had excellent knowledge of their subject and that they had high standing in their respective fields. There was also general agreement that the TV instructor's ability was excellent. Beyond these three items, the teachers had very few kind words for the TV course with which they had concrete experience. There was a general tendency to agree that the course was not slanted, that it's controverseality was relatively low; and there was a very mildly positive reaction to the general idea of educational TV. After that the teachers have nothing even mildly favorable to say about their experience with the TV course. They report very clearly that, on the average, their handling of a TV section did not free any time for them. They say that they had no participation in the development of the course and not even very much participation in the decision that the respondent himself be assigned to monitor a TV section. There is reported not much tendency to feel useful in the monitor's role and not much tendency to feel important as a teacher.

One would not expect of these faculty members a favorable attitude toward educational television, whatever its objective merits, if its actual use on the campus produces feelings of ineffectuality and uselessness. And no faculty member can be expected to rise to heights of enthusiasm for a program or a role he feels to have been imposed on him. We will return a bit later to consideration of these matters of participation and involvement.

Frequo I B Total 109 [redacted]

Specific T.V. Course N = 89

The following items relate to the particular T.V. course for which you are assigned on your campus. Follow the earlier procedures in recording your responses.

1 2 3 4 5 6 7

76.1	Poor	T.V. teacher's ability	5.9	Excellent
76.2	Excellent	T.V. teacher's knowledge of topic	1.5	Poor
76.3	High	T.V. teacher's standing in his field	1.3	Low
76.4	None	T.V. course content slanted to any one area	2.7	A great deal
76.5	Much	Time made free by handling the T.V. class	5.2	None
76.6	Much	Own participation in development of the T.V. course		None
76.7	None	Your participation in decision that you handle the T.V. class	3.9	Full
76.8	Not at all	How much do you like the idea of educational T.V.	4.8	A lot
76.9	Very much	Would you like to try your hand at giving instructions on T.V.	5	Not at all
76.10	Little	Your felt usefulness in T.V. course	4.3	Much
76.11	High	Your felt importance in T.V. course	3.7	Low
76.12	High	Controversiality of content of T.V. course	5.4	Low

Brah

Both [illegible]

III.A.3. Monitoring Teachers' Comparison of Lectures and TV Presentations.

Figure 1C presents data obtained when our 51 monitoring teachers were asked to make direct comparisons between lectures and TV presentations. We saw in Figure 1B that our teachers agreed that the television instructors were of high ability, had excellent knowledge of their subjects and were of high standing in their respective fields. But now, when a particular televised course is compared with a lecture course in the same subject "by a competent lecturer", the televised course comes off very much second best. Our teachers tend to see the televised presentation better in only three of the 19 comparisons they were asked to make. With respect to a) completeness, b) organization, and c) teacher's thoroughness of preparation, TV was judged better. Lectures were judged better on the other 16 comparisons. Lectures were judged most clearly superior with respect to the dimensions of a) humor, b) student's ease of paying attention, c) personalness and d) students' felt involvement. The judged superiority of lectures was not so great with respect to such variables as a) intelligibility, b) sophistication and c) coherence and was just barely superior on a) the citing of supporting evidence and b) teacher's apparent mastery of the subject.

We do not know, of course, which of these 19 attributes of an instructional procedure are given the greatest weight by faculty members. One is inclined to think, however, on the basis of the earlier data on the description of faculty role, that faculty members here are likely to be placing less weight on the aspects of teaching in which TV is judged good--on organization, preparation, etc--and more weight on such matters as personalness, student involvement, etc., matters with respect to which lecturers are perceived to be superior to TV. On the matter of "over-all quality of instruction", however, the judged superiority of the lecture method is not very great.

I

Figure 1 Instructional ~~Project~~ Total

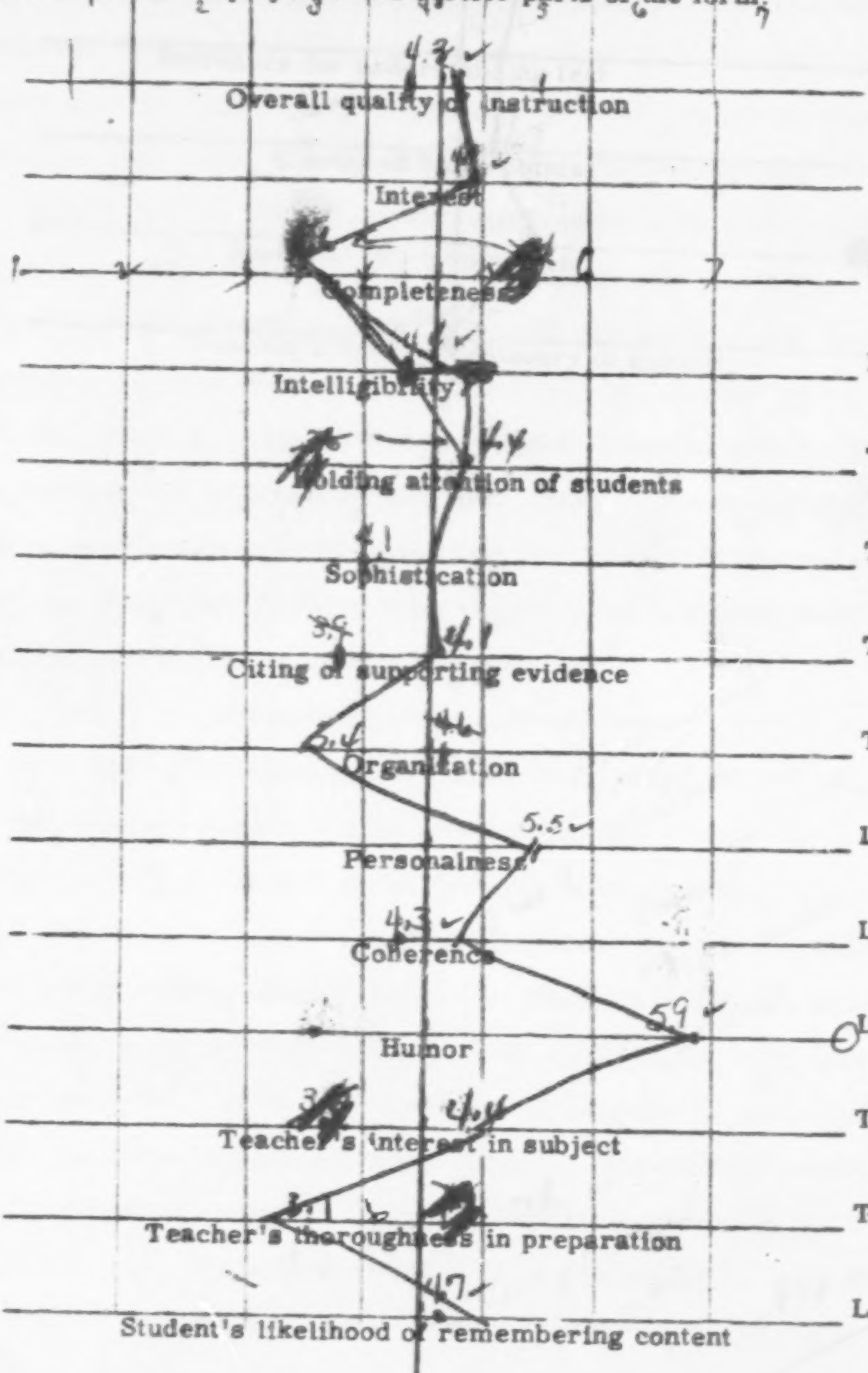
Ic

In presenting ~~Pro~~ TV better on one side, Lecture better on [illegible]

III

Comparison of Lectures and T.V. Presentation

The following items ask for a comparison of the televised course with which you are connected with a lecture course in the same subject and by a competent lecturer. Use the same procedure as that employed in the earlier parts of the form.



1 TV better — Overall quality of instruction — Lecture better

2 TV better — Interest — Lecture better

3 TV Better ~~Lecture better~~ — Completeness — Lecture ~~TV better~~

4 TV better — Intelligibility — Lecture better

5 TV ~~Lecture better~~ — Holding attention of students — Lecture ~~TV better~~

6 TV ~~Lecture better~~ — Sophistication — L ~~TV better~~

7 TV ~~Lecture better~~ — Citing of supporting evidence — Lecture ~~TV better~~

8 TV Better ~~Lecture better~~ — Organization — Le ~~TV better~~

9 TV better — Personalness — Lecture better

10 TV better — Coherence — Lecture better

11 TV better — Humor — Lecture better

12 TV Better ~~Lecture better~~ — Teacher's interest in subject — Lecture B ~~TV better~~

13 TV Better* ~~Lecture better~~ — Teacher's thoroughness in preparation — Lect B ~~TV better~~

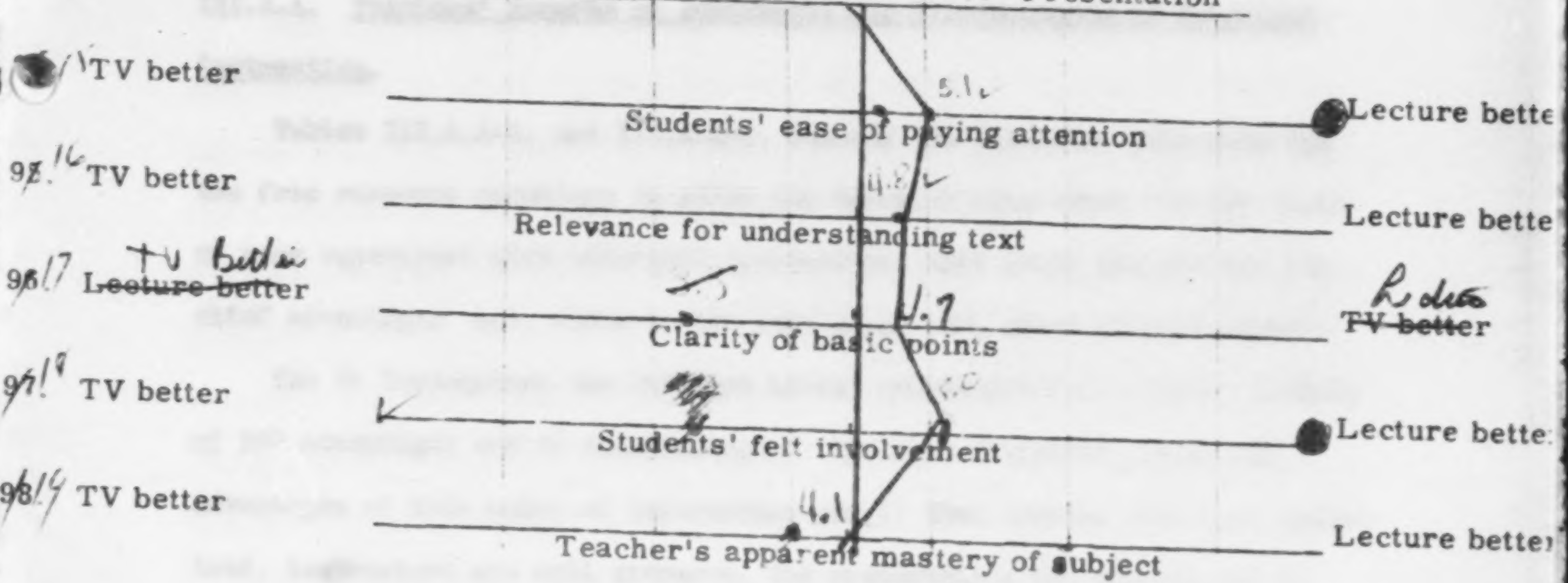
14 TV better — Student's likelihood of remembering content — Lecture better

Means, in order Presentations & All TV on left here

Only on 3, 8, 9, is TV Better

4.0 = Midpoint

Comparison of Lectures and T V. Presentation



involvement
attention
ease of
Humor
Personalness
Interest

TV Better only in
1) Completeness
2) Organization
3) Thoroughness of Prep —

III.A.4. Teachers' Reports on Advantages and Disadvantages of Televised Instruction.

Tables III.A.4-1. and III.A.4-2. contain the tabulated data from the two free response questions in which the teachers were asked "On the basis of your experience with televised instruction, what would you say are its chief advantages" and, later, on the same page, "Its chief disadvantages?".

The 51 instructors who returned useful questionnaires reported a total of 107 advantages and 94 disadvantages. Two most frequently perceived advantages of this mode of instruction are 1) that courses seem well organized, instructors are well prepared, the presentation has clarity and 2) that visual aids are good. Also there is a frequent observation that one gets better teachers via televised instruction. These responses are very consonant with data reported earlier from other studies as well as from the present one. Other than in these three categories of responses there is no frequently seen advantage in televised instruction.

When it comes to perceived disadvantages, as reported in Table III.A.4-2., there is a wider variety of unhappiness with the TV method of instruction. By far the most frequent general kind of disadvantages are seen in the perceived impersonality of the medium; 19 instructors report simply that it is an impersonal procedure, 14 report that it is impersonal in that the student cannot react to the teacher. Closely related to these disadvantages, perhaps, are the 16 answers in the category saying that the students can't ask questions as questions arise. These four categories of response (or two if one wishes to lump the three "impersonal" disadvantages in one category) include most of the disadvantages mentioned except for those in the category of technical difficulties. There was a good deal of objection to the fact that the sets get out of tune and that the picture is poor, the sound is not up to reasonable standards, etc.

This frequent mention of the impersonality of television ties in both with research in other settings and with our own earlier results concerning the desire of teachers for intimate contact with students and a desire for a feeling of genuine functional personal utility in the classroom. While there is not evidence in the literature to indicate that personal contacts between the instructor and student redound to any measureable educational advantage for either the student or the teacher, there is plenty of support for the notion that the teacher wishes that contact because of the psychic income it furnishes him. Certainly our sample of teachers show clear evidence of this general kind of orientation (Table III.A.4-1.); one should not be surprised whatsoever that they regard the impersonality of televised instruction as a grave disadvantage. On the basis of evidence from other studies, one is slightly inclined to believe that our present teachers are by no means unique in this feeling. The dimension of personalness-impersonality is clearly a significant one. Just what is the meaning of this dimension or what are the sub-dimensions involved in it remains matters to puzzle over.

Table III.A.4-1.

TABULATION OF FREE RESPONSES: ADVANTAGES OF TELEVISED INSTRUCTION

Advantages	No.	%
Instructor better prepared, greater clarity, better organization, etc.	24	22.42
Visual aids good	23	21.49
Efficient, uses available time, no tangents, co-ordinated	8	7.47
Easy to follow, attention better	3	2.80
Economy, saves time and labor	10	9.34
Get better teachers	24	22.42
Easier for students	0	0
Uniformity, same course for all students, no biased instructors	2	1.86
Thoroughness of coverage	3	2.80
Miscellaneous	10	9.34
Totals	107	99.94

n = 51 Instructors

Table III.A.4-2.

TABULATION OF FREE RESPONSES: DISADVANTAGES OF TELEVISED INSTRUCTION

Disadvantages	No.	%
Impersonal, general	19	20.21
Impersonal, teacher can't react to student	14	14.89
Impersonal, student can't react to teacher	12	12.77
Students can't ask questions when they arise	16	17.02
Boredom, attention drifts	8	8.51
Too fast	6	6.38
Technical difficulties--set breaks down, picture poor, sound poor	17	18.09
Test anxiety	0	0
Third hour difficulty (local instructor disagrees)	2	2.13
Totals	94	100

n = 51 instructors

III.A.5. Teachers' Feelings of Involvement and Their Attitudes Toward Televised Instruction.

Although the number of teachers returning questionnaires was small, it still is possible to examine and analyze our data for any outstanding and obvious differences among certain kinds and groups of teachers with respect to their orientation to televised instruction.

For example, one reasonably tenable hypothesis holds that those teachers who stress the intimate, person-to-person aspect of the role of teaching and who feel involved with students should react quite differently toward televised instruction than do those teachers who are relatively casual, uninvolved, and are impersonally oriented to their students. For the involved instructors, for those who seem likely to immerse themselves in teacher-student relationships, the televised instruction should be either a removal of basic satisfactions or a threat to such a removal. Those who can take students or leave them alone, those who maintain a relatively great psychological distance from students, should find less threat in televised instruction. To test that hypothesis we created an "involvement score" for each of our teachers by combining responses on the following items: No. 56, "Size of class you prefer"; No. 59, "You believe a close teacher-student relationship is . . ."; No. 63, "Amount of guidance you believe is necessary for students"; No. 64, "Amount of quizzing of students you feel is necessary"; No. 66, "How much do you think courses should be adapted to students needs"; and No. 67, "Your concern for student's opinion of courses." In effect, it was possible to treat these four items as a separate test and to give each instructor a score on the test. Then it is possible to divide the instructors into two groups, those scoring high on what we here define as involvement and those scoring low. Then it was possible to compare the answers of these involved teachers with those of the noninvolved teachers on other items in the questionnaire.

There were 25 instructors in the high involvement group. These teachers tended to favor more decidedly small over large classes, formed a close teacher-student relationship, believed students need a good deal of both guidance and quizzing, believe that courses should be adapted to student needs and report themselves concerned with student opinion of their courses. The 26 instructors in the low involvement group tended in the opposite direction.

The focus of the comparison was primarily on those items dealing with the specific TV courses upon which they were reporting and on the comparison of lectures and TV presentations.

When the scores for those highly involved were compared with those from the noninvolved teachers on the 12 items dealing with the specific TV course, few if any differences appeared. Only two differences approached statistical significance and neither of these actually reached the .05 level of statistical significance. The less involved teachers did find more tolerable the idea that they themselves might try giving instruction on TV. Also the less involved people were inclined to see more controversality of content in the TV course. When our involved teachers were compared with our uninvolved teachers in the way they compared lectures with TV presentation, a large number of differences showed up. These are presented in Figure 1D. While on only four of the 20 items are the differences between involved and uninvolved teachers large enough to achieve statistical significance at the .05 level or better, it seems reasonably safe to read the general trend of the data. A case can be made from Table III.A.4-1. that those teachers who have scored high on involvement generally are more favorable to the lecture method than are those we have described as not involved. And the converse, of course, also holds. The less involved teachers seem more inclined to give a high rating to televised methods of instruction. This does not mean that either group of teachers is likely, at the moment, to prefer televised instruction to lecture instruction, but only that those here described as relatively low in involvement are inclined to be slightly more favorable to televised instruction.

It makes general sense that the teacher who believes in the importance of close, personal and supervisory contact with students will also be the teacher who derives basic satisfactions from this more intimate approach to teaching. If so, the same individual will simultaneously find his convictions insulted and his satisfactions threatened by a departure from the preferred method of conducting classes. Thus his feelings against such a thing as televised and imported instruction, though not based on evidence concerning the educational effectiveness of the various modes of instruction, can run both strong and deep. It may be that clear and subtle evidence on the nature and effectiveness of various teacher-student relationships could contribute to the rationality of the teacher's response to technological changes. Certainly it makes sense to many educators that such evidences be sought. We obviously here can only hint, and that pretty blindly, at the kinds of evidence that might be advanced.

120

Comparison of Lectures and T.V. Presentation

The following items ask for a comparison of the televised course with which you are connected with a lecture course in the same subject and by a competent lecturer. Use the same procedure as that employed in the earlier parts of the form.

80. TV better ____ Overall quality of instruction ____ Lecture better

81. TV better ____ Interest ____ Lecture better

82. Lecture better ____ Completeness ____ TV better

L.01 83. TV better ____ Intelligibility ____ Lecture better

84. Lecture better ____ Holding attention of students ____ TV better

85. Lecture better ____ 4.4 Sophistication ____ TV better

86. Lecture better ____ Citing of supporting evidence ____ TV better

L.05 87. Lecture better ____ Organization ____ TV better

88. TV better ____ 6.0 Personalness ____ Lecture better

L.05 89. TV better ____ Coherence ____ Lecture better

90. TV better ____ 5.4 Humor ____ Lecture better

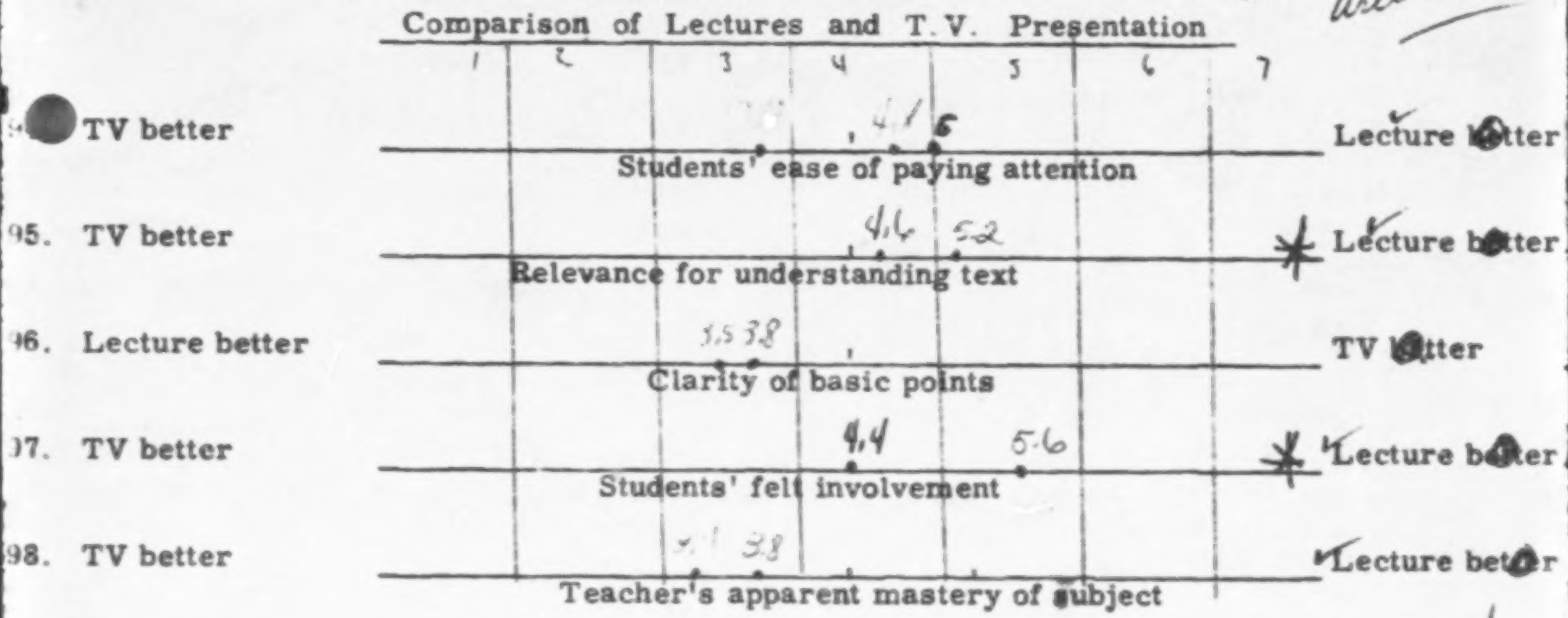
Sig L.10 91. Lecture better ____ Teacher's interest in subject ____ TV better

92. Lecture better ____ Teacher's thoroughness in preparation ____ TV better

93. TV better ____ Student's likelihood of remembering content ____ Lecture better

Involved with Students

Comparison of Lectures and T.V. Presentation



For Involved Teachers

15 state lectures better than TV

4 state TV is better

10 not sure

It is clear that those who are involved or want intimacy with students - are more favorably inclined to lectures than are those who are not involved -

III.A.6. Teachers' Felt Participation in the Television Project Related to Acceptance of Televised Instruction.

It is an obvious hypothesis that those teachers who were involved in the preparation of the TV course and who felt that it was at least partially their own project would be more favorable in the attitudes toward it than would those teachers who felt that the whole project~~s~~ ~~were~~ was something imposed upon them from outside. So with the necessary amount of arbitrariness, we made a "subtest of involvement" by combining scores on the following two items on the teacher questionnaire.

No. 74, "Your participation in the decision that you handle the TV class."

No. 75, "Do you like your participation in the development of the TV course."

Actually, as data in Figure IF will indicate, very few of the instructors felt that they had any participation in the development of the TV course. They felt more participation in the decision that they monitor the course on their own campus, but even here there was far from full participation, at least in the feelings of these teachers, in the determining of their own assignment. (Incidentally--and this bears on the interpretation of all our present data--no case can be made that the instructors who were assigned to monitor the televised courses were those most likely to be in favor of it.) They were assigned. And they were assigned often without being consulted whatsoever. In a number of cases they were assigned without being consulted whatsoever beforehand. Our interviews with local monitors around the network indicated some fairly bitter resentment on this point. And it is likely that such resentment shows up in their responses to the whole television experience. We shall see. Figure IF presents a comparison of the scores of 25 "high participation" teachers with the scores of 25 "low participation" teachers on items eliciting reaction to the specific TV course with which they were involved and on items comparing TV in general with lectures in general. (It must be kept in mind that "high participation" was not very high at all for anyone in this sample except those relatively few teachers who actually did collaborate on the preparation of the televised presentations. We do not have data on either how many or which ones of our 51 reporting teachers were actually involved in the preparation of the televised courses. A good guess is that 10 or 12 of the present 51 were involved at least in a consultative capacity. The mean score on items 73 indicates that there were a good number who felt at least somewhat participative.

With respect to specific items in Figure IV, there are statistically significant differences between the high and low participation teachers on four out of the twelve items dealing with responses to the specific TV course. Those high in participation were pretty obviously more favorable to the televised courses than were those low in participation. Those who have scored here as high in participation clearly were more favorable to the TV course with respect to Item 71, Item 75, Item 77, and Item 7[illegible] In other words, those who reported themselves to feel participant in the project were less inclined to say that the specific course was slanted, more uninclined to like the general idea of educational TV, more inclined to feel useful in the course itself and less inclined to regard the course as controversial.

The general trend of the data on the other items seems to conform to that characterizing these statistically significant differences.

It seems then that our data tend to confirm the hypothesis that those teachers who feel themselves to have participated in the preparation of the course and in the decision to monitor it on their local campuses are more likely to be in favor of it and to make positive judgments concerning specific aspects of the television mode of presentation.

The data in Figure 17, presenting data on the comparison of televised and lecture instruction by high and low participants, should be relevant to this hypothesis. As they fall, however, they neither support nor weaken it. On only one item out of the 19 in this section of the questionnaire is there a statistically significant difference in our two groups. That occurs with respect to item 89 wherein the highly participant teachers regard the TV method as better than the lecture method with respect to coherence. Other than on this item, there is no clear tendency for the participant teachers to be more favorable to TV in general than are the low participant teachers. One is inclined ~~or~~ to the impression that when the discussion turns away from a specific course to the general nature of television versus lectures, those who have participated or feel that they have participated may be able to achieve more objectivity in observing the differences between lecture and television. At least, they are not likely to be down with ready-made negative orientations to television production. They have been in it and have assented to it. Thus they are free, if they choose, to adopt an objective or perhaps even an experimental stance toward the thing.

It remains a reasonable hypothesis that faculty participation in the decisions concerning educational television and concerning the faculty's own personal connection with it is a significant motivational matter. Also the nature and extent of faculty participation is a significant administrative matter. Under many present circumstances, if faculty participation meant immediate and mere voting who does or does not believe in educational television, educational television would be dead. The securing of full, informed and rational participation in decisions is, however, a consummation both devoutly to be wished and exceedingly difficult to bring about.

N=21 126

N-25

Specific T.V. Course

The following items relate to the particular T.V. course for which you are assigned on your campus. Follow the earlier procedures in recording your responses

68. Poor ______________________ Excellent
T.V. teacher's ability

69. Excellent ______________________ Poor
T.V. teacher's knowledge of topic

70. High ______________________ Low
T.V. teacher's standing in his field

71. ~~[illegible]~~ ______________________ A great deal
T.V. course content slanted to any one area

72. Much ______________________ None
Time made free by handling the T.V. class

73. Much ______________________ None
Own participation in development of the T.V. course

74. None ______________________ 6 ______ Full
Your participation in decision that you handle the T.V. class

75. Not at all Sig* ______________ 5.1 ______ A lot *
How much do you like the idea of educational T.V.

76. Very much ______________________ 6 ______ Not at all
Would you like to try your hand at giving instructions on T.V.

77. Little Sig* ______________ 5 ______ Much *
Your felt usefulness in T.V. course

78. High ______________________ Low
Your felt importance in T.V. course

79. ~~High~~ 710 ______________________ Low *
Controversiality of content of T.V. course

* Statistically significant at <.05

127

Comparison of Lectures and T.V. Presentation

The following items ask for a comparison of the televised course with which you are connected with a lecture course in the same subject and by a competent lecturer. Use the same procedure as that employed in the earlier parts of the form.

1 2 3 4 5 6 7

80. ✓ TV better ? — 3.5 4.5 — Lecture better
Overall quality of instruction

81. TV better — [illegible] 5.1 — Lecture better
Interest

82. Lecture better — [illegible] — TV better
Completeness

83. ✓ TV better ? — 3.7 4.6 — Lecture bette
Intelligibility

84. Lecture better — [illegible] — TV better
Holding attention of students

85. Lecture better — 3.6 4.2 — TV better
Sophistication

8 Lecture better — 3.8 4 — TV better
Citing of supporting evidence

87. Lecture better — 4.3 4.4 — TV better
Organization

88. TV better — 6 6.2 — Lecture bette
Personalness

89. TV ~~better~~ — 3.9 5.2 — Lecture bette
Coherence

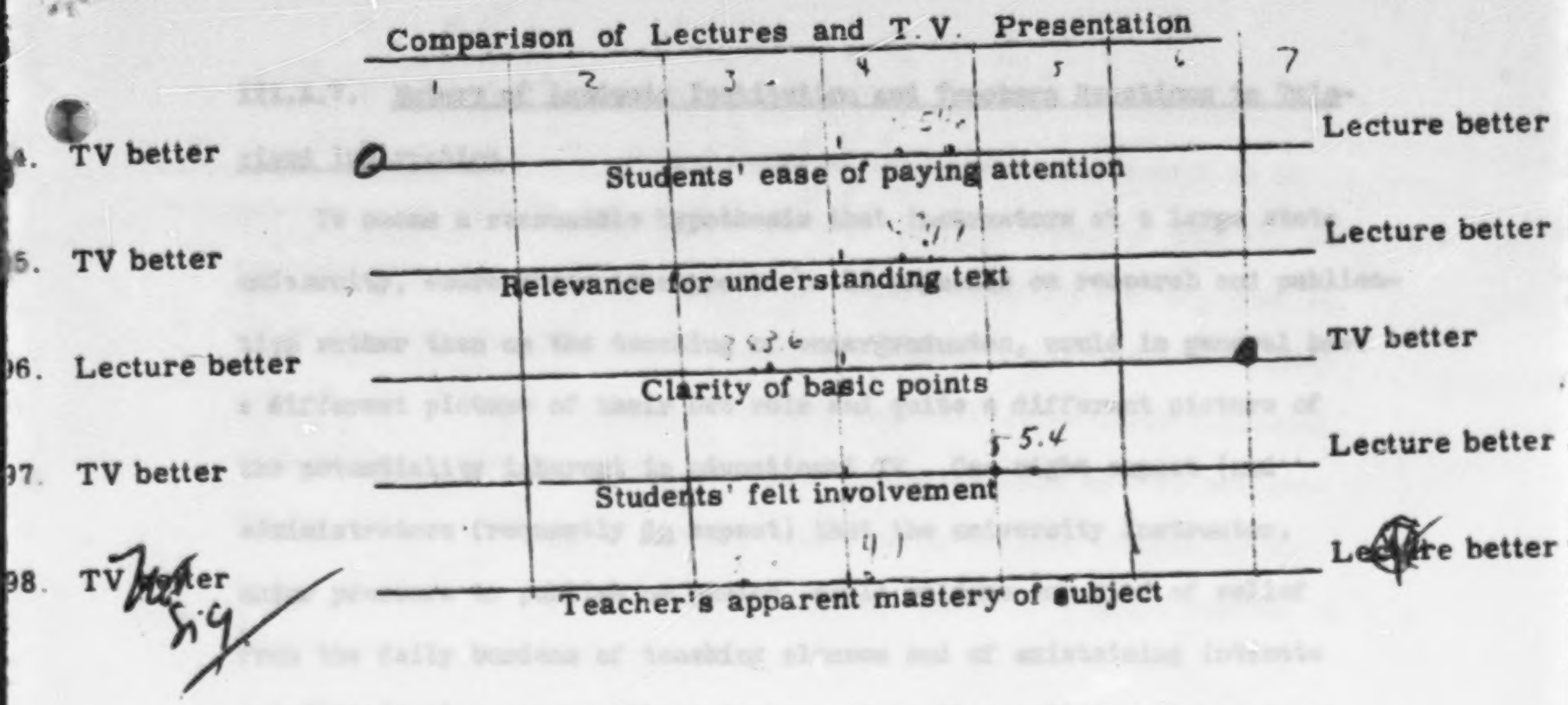
90. TV better — 5 5.2 — Lecture bette
Humor

91. Lecture better — 3.7 3.8 — TV better
Teacher's interest in subject

92. Lecture better — 4.6 5 — TV better
Teacher's thoroughness in preparation

93. TV better — 4.4 4.9 — Lecture bett
Student's likelihood of remembering content

Comparison of Lectures and T.V. Presentation



III.A.7. Nature of Academic Institution and Teachers Reactions to Televised Instruction.

It seems a reasonable hypothesis that instructors at a large state university, where there is supposed to be emphasis on research and publication rather than on the teaching of undergraduates, would in general have a different picture of their own role and quite a different picture of the potentiality inherent in educational TV. One might expect (and administrators frequently *do* expect) that the university instructor, under pressure to publish or perish, would welcome any kind of relief from the daily burdens of teaching classes and of maintaining intimate and individual contact with students. At smaller colleges, by contrast, where there is more emphasis on teaching and more tolerance for the individual who does not do research and does not publish, televised instruction, particularly that coming from another institution, would be regarded as an horrendous intrusion and threat.

Data in Figures 1G and 1H bear on this hypothesis. In Figure 1H are presented data bearing on the way in which ten teachers at a large state university compare with 41 teachers at other and smaller institutions in their view of themselves and of their role. In spite of the smallness and inadequacy of the sample here, one might well expect greater differences between these two groups of teachers than actually occur. In only two of the items are the differences between the two groups statistically significant. These differences occur on Item 49 and on Item 60. It is clear that the teachers in institutions other than the large state university are more inclined to regard their most important function as that of teaching and they do report that they spend more time at the teaching function. Other than differences on these two items, there are relatively small differences with respect to other role concepts and other expressions of attitude about the teaching function.

If the trend in the data from this sample of teachers were to be substantiated in a larger sample, we would have to conclude that the differences between teachers in the large state university and teachers in other institutions of higher learning are relatively slight. Certainly here we find the two groups of teachers very similar in their expressed concern for students' opinions of their courses, their beliefs concerning the amount of guidance students need, their beliefs concerning the amount of quizzing the students need, their tendency to adapt courses to students needs, and so on.

Data in Figure 1H bear out the general finding that there are few differences, in our present sample at least, between teachers in a large state university and teachers in other kinds of institutions. One might readily expect that the teacher in the large state university would welcome televised instruction if he thought that it had any chance at all of reducing the time he was to spend in teaching, of increasing the time he has available for research, of cutting down the demands made upon him of intimate contact with students. While the ten university teachers do seem inclined to be a bit more favorable to television than are teachers from other institutions, the differences are not by any manner of means pronounced. On only three of the 19 items in Figure 1H, in which televised and lecture procedures are compared, are there statistically significant differences between the two groups of instructors and on only two of these are the university instructors more favorable to the televised method of instruction. The University people regard it as superior in organization, superior with respect to the teachers' interest in subject but inferior in terms of the students self-involvement. However, on 12 of the 19 items the university instructors were more favorable than the other instructors to television.

While there are obviously no bases in our present inadequate data for general statements about the characteristics of teachers as those characteristics may vary from institution to institution there is at least a strong suggestion that the differences between teachers and teaching at various kinds of institutions have been overestimated. Certainly the casual observer of the educational scene can find in a large university a number of teachers who are highly conscientious and both deeply and personally involved in undergraduate teaching. And at the smaller liberal arts institution one can also find the teacher who successfully avoids both involvement with and work on teaching. Perhaps the nature of the institution in which the teacher teaches has less significance for his behavior than has been thought. Perhaps the important determiners of the nature and quality of his work are to be found not in the institution and not in the department, but in the classroom and within the skin of the individual teacher. And perhaps we can expect university teachers at the undergraduate level to show the same strengths, weaknesses, convictions, biases, satisfactions and disaffections as we find in teachers in smaller, less complex and less research-oriented institutions. Certainly no casual observer of the TEMP operation, has reported a mad scramble at the large state university to have all of its undergraduate courses put on video tape so that all teachers could be free from routine pedagogical efforts.

132

- n = 10

N n = 41

You Yourself

The following items ask you to set down your feelings about yourself and your role as a teacher. Remember, these are anonymous forms; the hope is that you will work ahead freely and without undue self-consciousness.

49.	Teaching*	Your own most important role as staff member	Research
50.	Administration	Your most important role as a staff member	Teaching
51.	Research	Your most important role as a staff member	Administratio
52.	Formal lecture	Teaching style most desirable to you	Discussion leader
53.	Provoke thought	Your most important function as a teacher	Cover content
54.	Stimulate interest in subject	Your most important function as a teacher	Cover content
55.	A great deal	Amount of time you give to preparing for each class	Very little
56.	Small	Size of class you prefer	Large
57.	Advanced	Level of courses you prefer to teach	Introductory
58.	Poor	Your own quality of teaching	Excellent
59.	Very important	You believe a close teacher-student relationship is	Unimportant
60.	Little*	Total time you devote to teaching	Most
61.	Little	Total time you devote to research	Most

64 & 66 significant difference [illegible] [illegible] [illegible]

You Yourself

62. Little — Total time you devote to other activities — Most

63. Much — Amount of guidance you believe is necessary for students — Little

3.2

64. A lot — Amount of quizzing of students you feel is necessary — Little

3.2

65. Little — You believe the importance of workbooks, outlines, etc is — Great

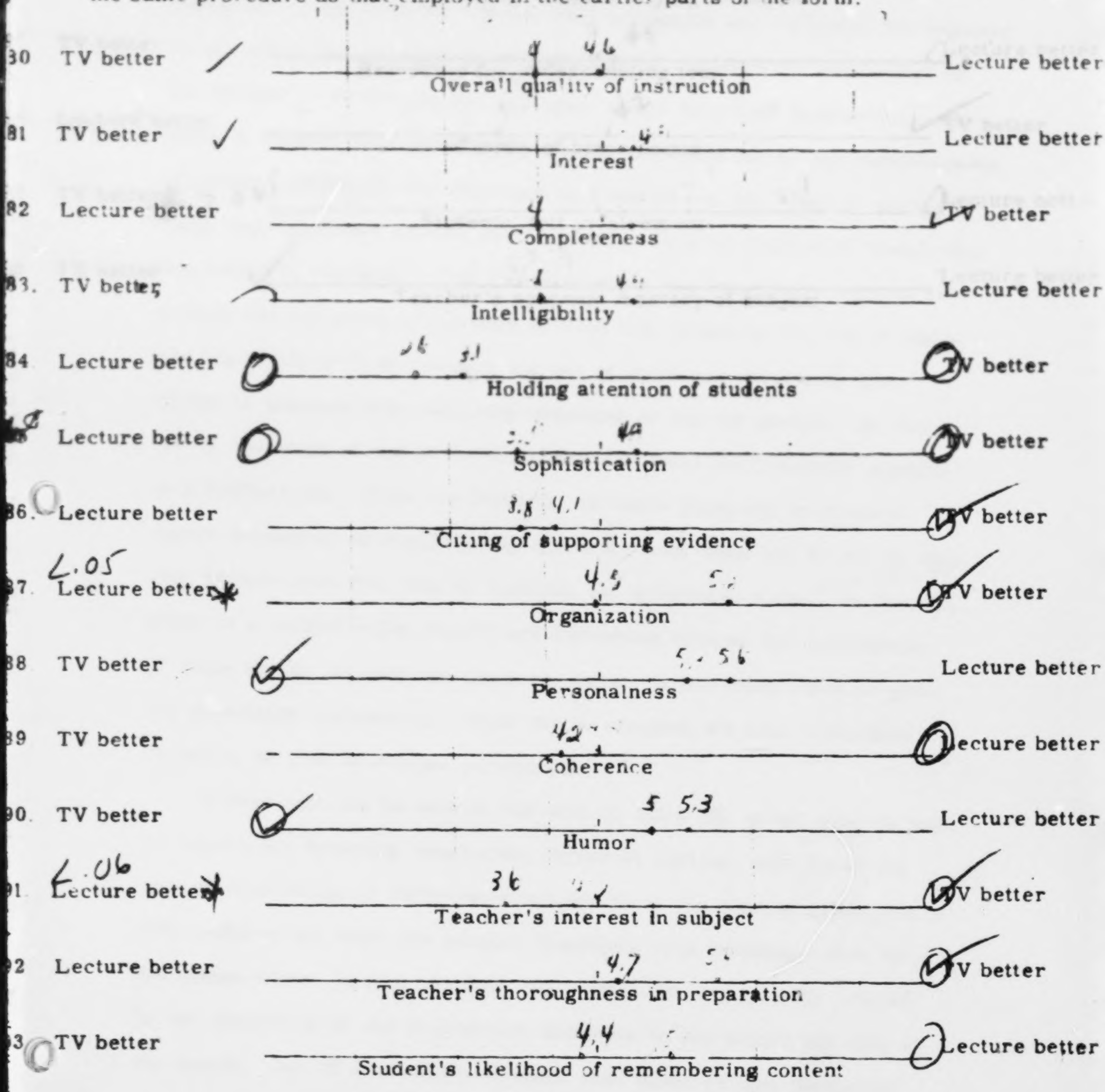
66. Much — How much you think courses should be adapted to students' needs — Little

67. A lot — Your concern for students' opinions of your courses — None

Figure 18.

Comparison of Lectures and T V Presentation

The following items ask for a comparison of the televised course with which you are connected with a lecture course in the same subject and by a competent lecturer. Use the same procedure as that employed in the earlier parts of the form.



Green = 10 Texas
Red = 41 Others

13

Comparison of Lectures and T V Presentation

94 TV better ________________ Lecture better

Students' ease of paying attention

95 TV better ________ 45 ________ Lecture better

Relevance for understanding text

96 Lecture better ________ 42 ________ ✓ TV better

Clarity of basic points

97 TV better * 7 0 2 ________________ Lecture better

Students' felt involvement

98 TV better ✓ ________________ Lecture better

Teacher's apparent mastery of subject

III.A.6. Teachers' Research Involvement and Response to Educational TV.

Of relevance to the foregoing discussion, the discussion of the teacher's conception of his role and the way that conception may influence his response to televised instruction, are data bearing on the research involvement of the teacher as it affects his attitudes toward televised instruction. In order to examine this question we created a subtest out of our questionnaire by scoring separately the responses to Items 49 and 61. Item 49 concerned "your most important role as staff member." Item 61 dealt with "total time you devote to research." The scores on these two items were combined into a total and our group of teachers divided into groups of 25, one of which was relatively high on research and one of which was relatively low. Figure 11 presents data comparing responses of the two groups. On only two of the items of the 12 in the figure are there statistically significant differences. These are Item~~s~~ 72, in which those who do research report themselves as significantly different from those who do not in that they achieve more free time by handling the television class, and Item 76. On Item 76, there is a statistically significant difference between the willingness of those who do research and those who do not to try their hands at giving television instruction. Those who do research are less interested in trying to give television instruction.

Nothing much can be made of the data in Table 11, except they do tend to support the tentative conclusion, hinted at earlier, that there has been an over-rating of differences between those who concern themselves with research and those who concern themselves with teaching. Here the two groups behave in much the same way. Again, we are severely limited in the generality of our declarative sentences by the nature and size of our sample. But it does seem reasonable that those who get themselves involved in research will, in the face of point blank questions, necessarily report upon teaching as an important kind of thing and will react as college teachers rather than as researchers to concrete aspects of teaching. Had we examined them on ways in which they prefer to spend their time or on ways they think are the surest ways to promotion and to professional advancement, our data might have been different.

n = 75 Red - those who do Research
n = 76 Blue - Don't Research

Specific T.V. Course

The following items relate to the particular T.V. course for which you are assigned on your campus. Follow the earlier procedures in recording your responses.

68. Poor 5.9 6.0 **Excellent**
T.V. teacher's ability

69. Excellent 1.5 1.9 **Poor**
T.V. teacher's knowledge of topic

70. High 1.7 2.6 **Low**
T.V. teacher's standing in his field

71. None 3.1 3.6 **A great deal**
T.V. course content slanted to any one area

72. Much * <.05 4.6 5.6 **None**
Time made free by handling the T.V. class

73. Much [illegible] 6.3 **None**
Own participation in development of the T.V. course

74. None 3.9 4.3 **Full**
Your participation in decision that you handle the T.V. class

75. Not at all 4.2 4.4 **A lot**
How much do you like the idea of educational T.V.

76. Very much <.05 * 4.5 5.4 **Not at all**
Would you like to try your hand at giving instructions on T.V.

77. Little 4.3 4.5 **Much**
Your felt usefulness in T.V. course

78. High 3.8 4.1 **Low**
Your felt importance in T.V. course

79. High 5.2 5.5 **Low**
Controversiality of content of T.V. course

III.A.9. Instructors' Academic Degrees and Attitude Toward Televised Instruction.

One might expect that individuals who hold the Ph.D. degree would, by and large, be more generally consonant and willing to explore for novel ways of going about their academic assignments than would individuals who do not have the security of the Ph.D. We were able to throw at least a mild bit of light on this kind of question by dividing our 51 instructors into a group of 15 who hold the Ph.D. degree and into another group of 36 who did not. Figure 1L presents data on the way the two groups conceive themselves in academic role. Again there are no great differences here but one does see some signs of what may be regarded as generally increased security on the part of individuals with the Ph.D. degree. They are more involved in administration than are their non-Ph.D. colleagues, they seem to be more confident in talking about their function in class, being both more willing to serve as discussion leaders and more willing to face large classes than are their non-Ph.D. degree colleagues. They are more inclined to want advanced courses, they frankly admit that their teaching is at a pretty high level of competence and seem to be inclined to let the students have a little more independence. One would expect, then, that instructors who do hold the Ph.D. degree would be a little more tolerant of the technological innovation which televised instruction represents. Additional data should bear on this question.

The data in Figure 1M do indeed bear on this question, but in no crucially determinative way. One could read from these figures a tentative conclusion that those with a Ph.D. degree were slightly more confident in the television monitor's role and were slightly more favorable to the general idea of televised instruction and the specific course with which they have been involved. However, on no one of the 12 items dealing with response to the specific course is there statistically significant differences between those who hold the Ph.D. degree and those who do not.

Figure 1N presents data in which the responses of the Ph.D. instructors are compared to those with the non-Ph.D. instructors with respect to lectures in general and TV presentation in general. As in the foregoing table, there are no significant differences here between the two groups on any one single item. Here the data might possibly be interpreted as a trend for the Ph.D. instructors to be slightly more favorable toward televised instruction. On 12 of the 19 items comparing television with live lecturing, those with the Ph.D. degree rate TV more highly than do those without the Ph.D. degree. On seven out of 19, however, those with the Ph.D. degree rate lecture higher than do those without the Ph.D. We have evidence earlier to suggest that these Ph.D. people are more confident and more secure. This might indicate also that they are more open and more willing to consider educational innovation, other things being equal. But when one compares an "imported" televised lecturer with the presentation of a "competent lecturer" the individual with a Ph.D. degree is likely to let his confidence show here too, and to think that he can do at least as well as the fellow that's coming to him through the electronic box. This is likely to mean that on a number of counts he would rate the lecture as better than the televised instruction. At any rate, the differences between those with the Ph.D. degree and those without are relatively small. On no single item of the 19 here is there statistically significant differences between instructors who hold the Ph.D. degree and those who do not. Hence any interpretation of the data is precarious indeed.

Total PHD - 15
NO PHD 37 14+

You Yourself

The following items ask you to set down your feelings about yourself and your role as a teacher. Remember, these are anonymous forms; the hope is that you will work ahead freely and without undue self-consciousness.

1 2 3 4 5 6 7

49. Teaching — 1.9 2 — Research
Your own most important role as a staff member

50. Administration — 5.1 5.7 — Teaching
Your most important role as a staff member

51. Research — 3.4 3.5 — Administration
Your most important role as a staff member

52. Formal lecture — 3.7 4.4 — Discussion leader
Teaching style most desirable to you

53. Provoke thought — 2.2 2.6 — Cover content
Your most important function as a teacher

54. Stimulate interest in subject — 2.2 2.3 — Cover content
Your most important function as a teacher

A great deal — 2.5 3 — Very little
Amount of time you give to preparing for each class

56. Small — 2.9 4.2 — Large
Size of class you prefer

57. Advanced — 3.3 3.7 — Introductory
Level of courses you prefer to teach

58. Poor — 4.1 4.9 — Excellent
Your own quality of teaching

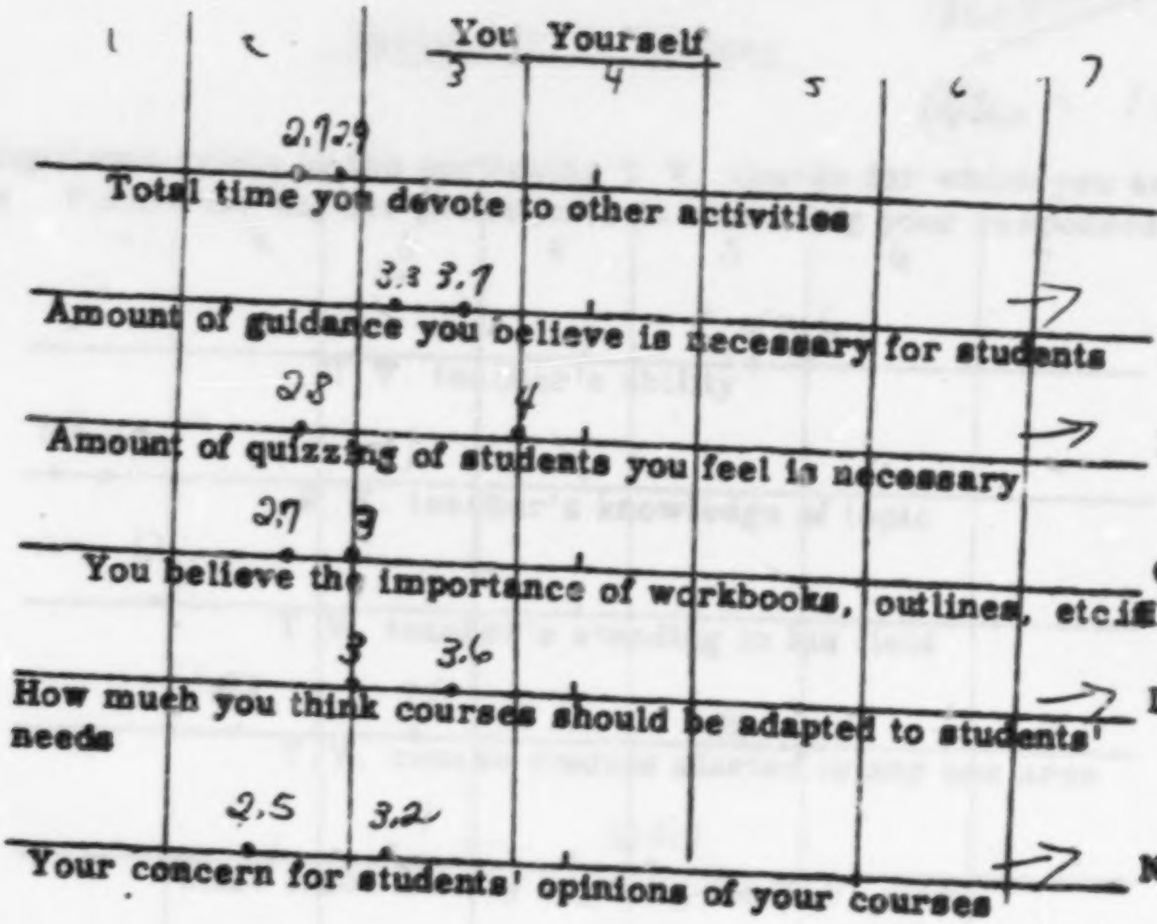
59. Very important — 2.8 2.8 — Unimportant
You believe a close teacher-student relationship is

60. Little — 4.9 5.1 — Most
Total time you devote to teaching

61. Little — 2.7 2.8 — Most
Total time you devote to research

Not [illegible] for the [illegible]

You Yourself



62.	Little	Total time you devote to other activities	Most
63.	Much	Amount of guidance you believe is necessary for students	Little
64.	A lot	Amount of quizzing of students you feel is necessary	Little
65.	Little	You believe the importance of workbooks, outlines, etc is	Great
66.	Much	How much you think courses should be adapted to students' needs	Little
67.	A lot	Your concern for students' opinions of your courses	None

Res —
No PhD N = 143 37
Also : 15 PhD'

Specific T.V. Course

The following items relate to the particular T.V. course for which you are assigned on your campus. Follow the earlier procedures in recording your responses.

No.		1	2	3	4	5	6	7		
68.	Poor					5.7	6		Excellent	
	T.V. teacher's ability									
69.	Excellent	1.2 1.4							Poor	
	T.V. teacher's knowledge of topic									
70.	High	1.9 2							Low	
	T.V. teacher's standing in his field									
71.	None		2.5	3.6					A great deal	
	T.V. course content slanted to any one area									
72.	Much					5.0 5.2			None	
	Time made free by handling the T.V. class									
73.	Much				.7		6	6.5	None	
	Own participation in development of the T.V. course									
74.	None			3.9	4.7				Full	
	Your participation in decision that you handle the T.V. class									
75.	Not at all				4.7	5.5			A lot	✓
	How much do you like the idea of educational T.V.									
76.	Very much				4.7	5.2			Not at all	
	Would you like to try your hand at giving instructions on T.V.									
77.	Little				4.3 4.9				Much	✓
	Your felt usefulness in T.V. course									
78.	High			3.6	4.1				Low	✓
	Your felt importance in T.V. course									
79.	High					5.2	6.4		Low	✓
	Controversiality of content of T.V. course									

No differences are significant.

Comparison of Lectures and T.V. Presentation

Blue = Ab 144

The following items ask for a comperison of the televised course with which you are connected with a lecture course in the same subject and by a competent lecturer. Use the same procedure as that employed in the earlier parts of the form.

1 2 3 4 5 6 7

80. TV better ① 4.1 4.6 Lecture better
Overall quality of instruction

81. TV better ① 5.2 5.4 Lecture better
Interest

82. Lecture better 4 4.9 ⑦ TV better
Completeness

83. TV better ③ 4.2 4.8 Lecture better
Intelligibility

84. Lecture better ⑧ 2.2 3 TV better
Holding attention of students

85. Lecture better 3.8 4 TV better
Sophistication

86. Lecture better 3.5 4.3 ⓧ TV better
Citing of supporting evidence

8 Lecture better 4.4 5.1 TV better
Organization

88. TV better 5.2 5.5 Lecture better
Personalness

9. TV better ⑤ 3.8 4.2 Lecture better
Coherence

0. TV better 5 5.1 Lecture better
Humor

1. Lecture better 3.4 4.3 ⑥ TV better
Teacher's interest in subject

2. Lecture better 4.6 4.7 ⑦ TV better
Teacher's thoroughness in preparation

3. TV better ⑧ 4.5 4.8 Lecture better
Student's likelihood of remembering content

no significant difference

7-15

Oh Def ✓

Comparison of Lectures and T.V. Presentation

		1	2	3	4	5	6	7	
94.	TV better ✓ ⑨				4.7	5.1			Lecture bett
				Students' ease of paying attention					
95.	TV better ✓ ⑩				4.6 4.7				Lecture bett
				Relevance for understanding text					
96.	Lecture better			3.2 3.9					⑪ TV better
				Clarity of basic points					
97.	TV better ✓ ⑫					5 5.3			Lecture bette
				Students' felt involvement					
98.	TV better			3.3 3.6					⑬ Lecture bette
				Teacher's apparent mastery of subject					

Obp -

7 Lecture Better

1 TV Better

Ow v 14 Comparisons

III.A.10. Reactions of Instructors in the Catholic and Non-Catholic Institutions.

One might be inclined to think that religious denominationalism might be a factor in the instructor's reaction to the coming of televised material into his institution. One might think that the Catholic institutions in the area would be somewhat resistant to the nondenominational or at least non-Catholic source of some of the courses coming into the institution. The hypothesis can be investigated by comparing the responses of the 18 instructors from Catholic institutions with the responses of 21 instructors from Non-Catholic instituions to questions about a specific TV course and questions asking for general comparisons of lectures and television presentation. (The instructors reporting from the large state university involved in the network were not included in this analysis. It was felt that denominational matters were likely to be of less import to instructors from the state university than to instructors in the relatively smaller and perhaps more religiously-oriented institutions.) Table 10 shows the Catholic and Non-Catholic reactions to specific TV courses. Of the 12 items asking for questions to specific TV courses, on only one was there a difference that reached statistical significance. That was the Item 77 in which the Catholic instructors felt appreciably less useful in the TV course than did the non-Catholic instructors. There was no significant difference and not very much of any kind of observable difference between Catholics and Protestants in the perceived slanting of the course or in the perceived partiality of it. Catholics were somewhat more inclined than the Protestants to like the general idea of educational TV.

The data in Figure 1P are relevant for the same kinds of considerations. One might expect that if the Catholic institutions feel themselves to be different from the institutions from which most of the programs are originating and if they feel themselves at all defensively in the minority, one might expect a negative reaction not only to specific televised courses but to a general idea of televised instruction as compared to live lecturing. Such is clearly not the case. There is no difference in Figure 1P that approaches statistical significance. The results are remarkably similar for instructors in Catholic and in non-Catholic institutions. Or one might say that the Catholic institutions are by no means any more insular than are the Protestant denominational institutions in the network and perhaps none, Catholic or otherwise, is insular.

At the very least, the absence of differences here suggest pretty clearly that religion has not been an obviously significant factor in determining explicit faculty reactions to televised instruction.

Catholic = Red

Specific T.V. Course

The following items relate to the particular T.V. course for which you are assigned on your campus. Follow the earlier procedures in recording your responses.

1 2 3 4 5 6 7

68.	**Poor**	**T.V. teacher's ability**	**Excellent**	6.5 6.6
69.	**Excellent**	**T.V. teacher's knowledge of topic**	**Poor**	1.1 1.2
70.	**High**	**T.V. teacher's standing in his field**	**Low**	1.5 2.1
71.	**None**	**T.V. course content slanted to any one area**	**A great deal**	4 4.8
72.	**Much**	**Time made free by handling the T.V. class**	**None**	5.3 6
73.	**Much**	**Own participation in development of the T.V. course**	**None**	6.5 6.1
74.	**None**	**Your participation in decision that you handle the T.V. class**	**Full**	4.7 5.5
75.	**Not at all**	**How much do you like the idea of educational T.V.**	**A lot**	3.9 5.2
76.	**Very much**	**Would you like to try your hand at giving instructions on T.V.**	**Not at all**	5.1 5.2
77.	**Little** *	**Your felt usefulness in T.V. course**	**Much**	2.9 4.7
78.	**High**	**Your felt importance in T.V. course**	**Low**	3.8 3.9
79.	**High**	**Controversiality of content of T.V. course**	**Low**	4.9 5.5

45 non Cath [illegible]

Catt.dic.-hd

149

Comparison of Lectures and T.V. Presentation

The following items ask for a comparison of the televised course with which you are connected with a lecture course in the same subject and by a competent lecturer. Use the same procedure as that employed in the earlier parts of the form.

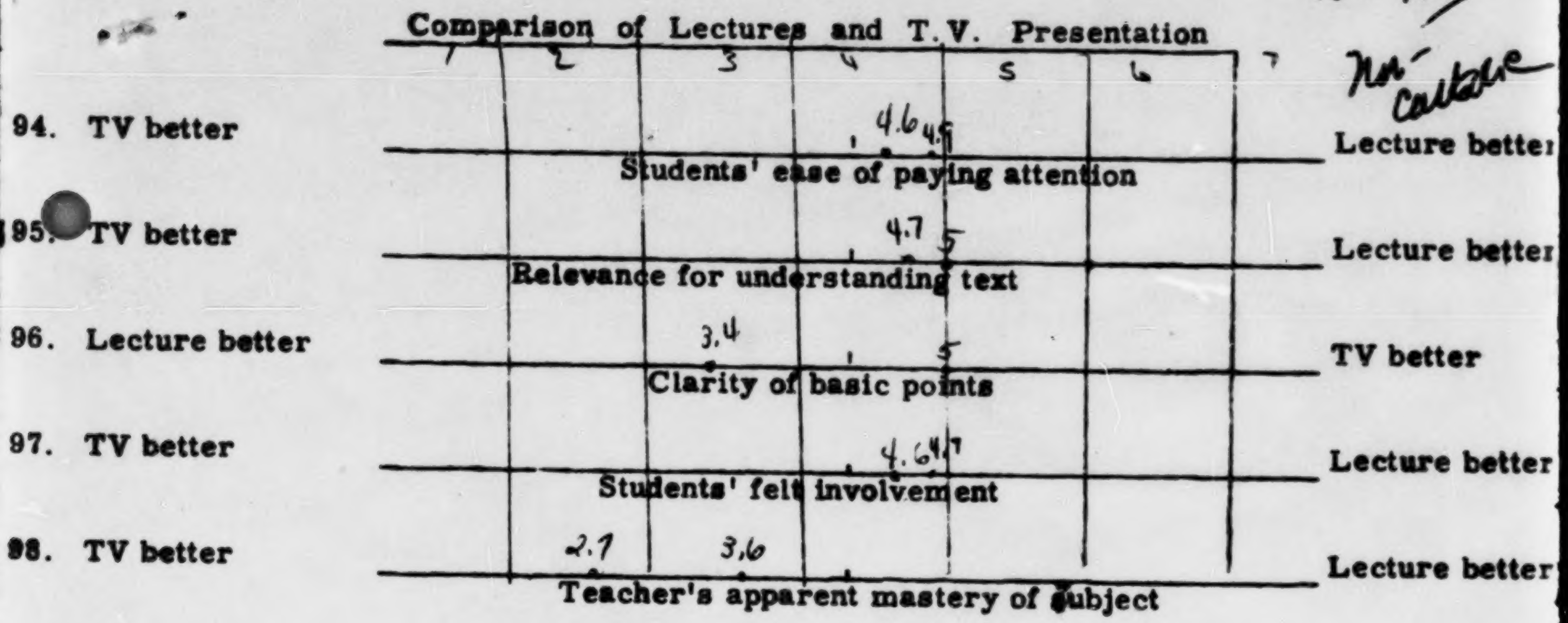
1 2 3 4 5 6 7

80.	TV better	4.4 4.7 [illegible] 4.6	Overall quality of instruction	Lecture better
81.	TV better	4.8 5	Interest	Lecture better
82.	Lecture better	4 4.1	Completeness	TV better
83.	TV better	4.5 4.6	Intelligibility	Lecture better
84.	Lecture better	3.2 4.4	Holding attention of students	TV better
85.	Lecture better	4.2 4.4	Sophistication	TV better
86.	Lecture better	3.8 4.1	Citing of supporting evidence	TV better
87.	Lecture better	4.2 5	Organization	TV better
88.	TV better	5.7 5.7	Personalness	Lecture better
89.	TV better	4 4.2	Coherence	Lecture better
90.	TV better	5 5.1	Humor	Lecture better
91.	Lecture better	3.5 3.6	Teacher's interest in subject	TV better
92.	Lecture better	4.2 5.5	Teacher's thoroughness in preparation	TV better
93.	TV better	4.4 5	Student's likelihood of remembering content	Lecture better

Catholic =
150 Red

Non-Catholic

Comparison of Lectures and T.V. Presentation



[illegible] on TV

Interviews with Television Instructors.

During the course of the present project there was no attempt to conduct highly structured interviews with the teachers who presented televised courses for the network but there was a good deal of general discussion and contact with a majority of these instructors and also with television teachers from a variety of other institutions.

One easily gets the impression that these instructors were selected on the basis of their articulateness, their reputation for good classroom teaching and for the judgment that they could make the transfer from face to face classes to this particular kind of teaching procedure. Most of them seemed to be the kind of people who could not only use showmanship, but perhaps derive some satisfaction for its proper use in a pedagogical setting. And, these people, more than most college teachers, seem to have a "   " or intensity about them in that they gave evidence of caring deeply about either their subjects or their students or both.

In attitude toward the potentialities of instructional television, these men range from the position of great enthusiasm to one of judicious and tentative approval. One enthusiastic one had this to say, "For my subject, I don't think anything can possibly match television. Almost every point I want to make can be made better through the use of visual materials, and television cannot be beat as a way to get visual material right before the students' eyes. Also, to me it was wonderful to have the time and the resources to get my demonstrations set up so well that they worked every time." A somewhat less enthusiastic but still positive attitude characterized a professor who said, "Well I'm not sure that television is any final answer. I do think, however, that if lectures in large classrooms ever succeed in teaching anybody anything, that television instruction can do better. I do not know for sure what decrement in learning there may be when there is no face-to-face contact between teachers and students."

All instructors interviewed agreed wholeheartedly that preparation for the cutting of a television tape was relatively onerous and much more thorough than preparation for the giving of a classroom lecture. Not only did there appear to be more preparation for the act of communicating, more thought to the desirable ways and desirable sequences for presenting the subject matter, but more preparation also at a deeper intellectual level. One instructor remarked, "I've been teaching this course for years, but the very idea that many of the people in my own department might walk in and see what I'm teaching on television has made it necessary to go and do a good deal of reading just to be sure I know what I'm talking about. And I am somewhat ashamed to say that some of the things I have been teaching in recent years have been wrong--demonstrably wrong. I suspect that if all teachers were required to present their subject matter in such a way that their colleagues could see what they're doing, that there would be much more reading, much more preparation and much more consultation with experts in various fields before a man undertook a classroom lecture."

The Personal Touch.

Almost all the instructors on TV said they missed the personal interaction with students, particularly at the beginning of their experience at televised teaching. Most of them, however, said that they learned to get along without it and that they were able to feel that they were at least in one-way contact with their students. One of the television instructors reported that he adopted a variety of strategems during the process of cutting the tapes in his effort to make the operation personal. He said that he felt it necessary to interest, particularly during rehearsals and between rehearsals with the people on the set, that during rehearsal he felt it necessary to clown around to see if the girl holding the idiot board or the cameraman was paying attention to him and that he found himself directing remarks, often irreverent and irrevelant, to the program director. Also he said that frequently during the actual cutting of a tape, he found himself, with what seemed like semi-deliberation, phrasing his material quite differently from the way he did during rehearsal. This, he thought, was an attempt to avoid the appearance of the cut-and-dried and overly rehearsed presentation which he disliked. He felt he could not keep up the appearance of spontanity unless there was some genuine spontaneity there. When asked about the absence of feedback from students so that he could adjust his presentation to their needs, this instructor said that although he missed the opportunity to read the facial expressions of the students and hear them laugh, "especially, perhaps the latter, he did not feel that this kind of feedback, for an experienced teacher, was absolutely vital. "If you know your subject and know your students," he said, "you ought to be able to imagine them well enough to catch them where they are and to lead them into the kinds of puzzles you want to create for them. I myself do not believe that questions in classes, certainly in large classes, ever achieve very much. And a lot of the questions students want the teacher to answer should not be answered by the teacher anyhow. I believe in creating puzzles for students, puzzles that they themselves must work their way out of. I think you can do this on television and in some ways you can do it more successfully there than in class. You do not have to contend with the kinds of serious distractions that a serious but totally irrelevant question from a student can create. Once you have their attention, and you assume you do, you can build up to the presenting of a puzzle, and if you practice your art sufficiently well, you've got the students caught in puzzles which they can't forget. They may be compelled to do some reading, for example; and if you can make the puzzles truly the puzzles of the students, you can count on it that their reading is going to be pretty keen and pretty much to the point." Another instructor, when asked about the personal-impersonal dimension, said that it was his feeling that the procedure was quite personal for the students, but it was pretty much "a one-way personalness." Students, he maintained, "can see every flick of every expression on your face and they probably have an unparalled opportunity to know the television instructor." Certainly you cannot fool anybody on television," he said; "I think students can tell very accurately whether you know what you're talking about or *when* you know what you're talking about, they can tell whether or not you have a genuine enthusiasm for your subject; and in a more personal vein, I think they can tell whether or not you're really in favor of their learning. And because of the intimacy of television close-ups they can probably tell this about their TV teacher more surely and more subtlely than they can if they see him only in large lecture classes."

Another teacher reported that it was a shocking experience to him to encounter students on the campus who seemed to know him very well and to speak to him cordially, as if he should know them, when he had never seen them before in his life. "They seemed to know me," he said. "They perhaps know me too darned well. At least they know me well enough to call me up at my home in the evening and ask me questions about coming examinations and such things."

Only one of the instructors contacted had strongly negative feelings for television instruction on the basis of the lack of personal contact. He said that he never got over the feeling that he was talking to a blank wall and that he was playing the role of something not much more animate than a tape recorder or a phonograph record. He reported that when he saw his own presentations, they gave him cold shivers and that he never succeeded in warming up to the procedure. He did not want to go through the experience again.

On the question of the controversiality or conventionality of content, the question of whether or not the teaching on tape for an unknown, large, and diversified audience had an undesirable effect on the content of the course, most television instructors tended to feel that there had to be considerable care exercised in order not to rub unnecessarily the wrong way the sensibilities of students at the various colleges on the network, and in order not to irritate undesirably and unnecessarily teachers around the network who may not quite agree with the television instructor, either on the proper content to cover, or on the proper sequences in which to cover it, or on ways to interpret ambiguous material. One instructor remarked, "This business of teaching on the network certainly does clean up the kinds of stories you tell to illustrate your points." Another TV instructor commented, "You have to take your choice: You can have great freedom more personal vein, I think they can tell whether or not you're really in favor of their learning. And because of the intimacy of television close-ups they can probably tell this about their TV teacher more surely and more subtlely than they can if they see him only in large lecture classes."

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PRECEDING PAGES MISSING

in teaching a small and familiar group, or you can have less freedom in teaching a large group." He goes on to say, "Great freedom is fine, but often it turns out the freedom to be sloppy."

Did pressure to avoid unnecessary controversiality diminish the general quality of the course? There was no general feeling among the television instructors that the avoidance of controversy really reduced the quality of the course they were teaching. Perhaps the answers would have been different had higher level courses been involved. One instructor, for example, said, "There's no room for controversy at the introductory level. We've got to teach words and we've got to teach facts and we've got to teach general ideas that are pretty well established, the student must learn all this before he is able to engage in meaningful contention with controversial questions. There's no profit in a controversy among the ignorant."

Another instructor remakred on the fact that in his own face-to-face courses he generally brought in a good deal of topical material related to life on his own campus and that such material very often could illustrate quite keenly the points he wished to make. Teaching for network consumption, by contrast, made him seek for less personal, less immediate and less topical illustrative material. He thought that perhaps this led to somewhat less interest on the part of the students but did not necessarily result in a over-all decline in the quality of the instruction.

Observations on attitudes of colleagues.

A number of the television instructors reported they felt keenly some open hostility on the part of their departmental and other colleagues, hostility that seemed to be generated by the fact that he was doing the television teaching. One instructor reported that during the semester in which he was most involved in cutting his television tapes he had had no social contact with the other members of his department. He thought that perhaps the fact that he was so busy had something to do with this, but then he said, "There is a cold attitude of mere politeness around here now. There is, it seems to me, a tendency to avoid me. Maybe each of these people thinks that he is better equipped than I am to teach the course. And certainly none of them should be expected to take gracefully the necessity of sitting there twice a week hearing me teach their subject matter. If educational television is going to work, something has got to be done to take the television instructor out of competition with his colleagues."

Another instructor reported it to be his impression that his department was battling, in every subtle way it could invent, against the use of the televised course. "Neither individually nor in meetings, has there been any expressed objection to the use of television in the department," he reported, "but I certainly got the impression that the department would like to throw it out if it could find grounds on which to do so. There has been some action to limit the use of televised instruction and it may be only an accident, though I doubt it, that this departmental action was taken at a meeting from which I was absent. I predict that there will be less and less use of the televised course in my department."

Along a similar line, another instructor reported it to be his impression that his colleagues were quite threatened when the report reached the department that the dean and the president of his institution had seen one of the televised productions and had been quite enthusiastic about them. "The day after word of this development came back to the department," he reported, "the atmosphere in the departmental committee which I attended seemed to me to have cooled off by about 40 degrees from what it was the week before."

~~In-response-to-questions-on-why-this-opposition-should-exist,-the-television instructor~~

In response to questions about the reasons for this felt opposition on the part of their colleagues, the TV instructors were by no means either clear or unanimous. The interviewer reported the feeling in talking on this point that there was some apparent inhibition due to modesty--that a number of the TV teachers felt they were chosen because they were better teachers and that those not chosen were resentful, or "jealous"; few teachers could be expected to make such an assertion baldly even if they believed it to be true. At any rate, the TV instructors were inclined to be laconic on this kind of issue. "It's a competitive life," one said, and would not expand. "All of us would like to be famous teachers," said another.

Others pointed to the fact that their colleagues had little to say about the decision to produce the TV course ~~and apparently nothing to say about the decision to produce the TV course~~ and apparently nothing to say about the decision on who was to teach it. "I would have been made more comfortable," one reported, "if I could have worked as a representative of my department. Then my colleagues would have felt better. But maybe it would have ruined the course. I don't know."

In response to the question "Is there concern among your colleagues that you are teaching a slanted course?" the responses were generally negative. The matter of substantive or theoretical slant did not appear to assume significant proportions. However, one TV instructor responded with the remark "They seem to think I'm teaching a course in myself." When pressed for elaboration, he said only, "I guess I'd better scratch that. Actually, it seems to me that some people on the campus act as if they think I'm likely to win the love of all the students, leaving nobody to love them. Or should I leave this kind of talk to the psychologists? Are you sure these are anonymous interviews?"

Was it Worth the Trouble?

Every television instructor expressed himself and was initially surprised at the amount of time and effort it took to prepare a presentable tape. A number of them marveled at their own foolishness at getting themselves involved in such a procedure; but most of them seemed to take some satisfaction in the fact that they had carried off the adventure with at least some degree of success. There was some general concern among the television teachers about their recompense, either in time or money, for televised instruction; but this did not seem to be a matter of great urgency at the time of the interviews.

Has the experience on television affected your non-television teaching? About half of the instructors were emphatically positive on this point, saying that they found themselves using in their face-to-face classes, even in courses that were different from the television courses, some of the techniques and procedures and demonstrations that had been developed for the televised course. They also reported with some frequency that their lecturing procedures had changed toward the more clearly organized. There remained a number, however, who reported that there was no noticeable effect or carry over. "The two forms of teaching are so different," reported one, "that the twain don't meet at all."

Has your course had any effect on the teaching of your colleagues? No one was able to make much of a response to this but the general inclination was toward doubt. One instructor said, "I do not think I am good enough at any aspect of teaching to scare any of my colleagues. I think," he continued, "that the idea of the openness of television instruction to the inspection of anybody is a little frightening to my colleagues. It is to me."

Summary

These casual reports of these casual interviews cannot, of course, contribute any hard knowledge to our attempt to understand and appreciate instructional television. The feelings of these instructors can, however, be used in our search for insights and perhaps can lead to meaningful hypotheses concerning the future acceptance of television procedures and future adaptations of the procedures for its most satisfactory use in advancing educational goals.

A number of points dealt with in these interviews begin to take on both relevance and clarity. It seems very certain, for example, that a man's rewards for teaching on TV are not likely to come in the form of the increased affection and respect of his colleagues. It is also clear that instructing on television is not very much like instructing elsewhere. The impersonality of it, from the teacher's point of view, the absence of immediate as well as personal feedback, are among the factors making televised instruction different from conventional instruction. It may well require not so much better teachers--or "master teachers"--but teachers who have a special pattern of skills that are adapted to the nature of the median and who can get their professional satisfaction from other than person-to-person contact with students.

The interviews also raise some difficult questions concerning the most feasible procedures to arrange compatible relations between TV instructors and their colleagues. Also there are questions concerning procedures for selecting the best and most appropriate teachers for TV.

III.A.12. Summary: Faculty Reactions.

In general terms, the reaction of 51 faculty members who responded to the TEMP questionnaire sent to local monitors of TV presentations may be summarised as follows.

1. Our 51 instructors tend to have an image of themselves that might be described in terms of the "Mr. Chips syndrome". They see themselves functioning primarily as teachers and as teachers who value highly the personal, intimate and mutually stimulating intellectual relationships with their students.

2. Our 51 monitoring teachers tend to agree that the instructors who presented the particular televised courses with which they were concerned were people who had excellent knowledge of their fields, who had high standing in their particular disciplines, who were high in their ability to teach. Other than this, the instructors had few kind words to say about specific televised courses.

3. There is little if any evidence in our data to indicate that the faculty members who monitored the courses had any feeling of effective involvement or participation in either the preparation of the courses or in the decision that they themselves monitor it.

4. When the questionnaire gets down to concrete cases and asks for an actual comparison between the televised course with which the instructor was familiar and a similar course given by a "competent lecturer" the TV comes as decidedly inferior.

5. Courses given by "competent lecturers" were rated especially superior with respect to "personalness", "humor", and "student involvement". These are the characteristics of a course that seems most consonant with our teachers' self image. There is little tendency to give any weight to

organization or thoroughness or to any other attribute with respect to which TV instruction is likely to be especially strong.

6. When asked about the advantages of the televised instruction, our teachers report that the television courses were well organized, based on good preparation, characterized by clarity of presentation and possessed of good visual aids. None of these attributes are likely to be regarded by our 51 teachers as pedagogically vital. The disadvantage of "impersonality" was the most frequently mentioned.

7. Instructors who score high on what might be regarded as a test of "involvement" with the teaching function are less favorable toward televised instruction. Those who were high on the "involvement" tended to look with disfavor on this and perhaps any other departure from the established or the "ideal" and relatively personal methods of instruction.

8. As reported earlier, few of our instrutors felt that they had participated either in the preparation of any of the TV courses or in the decision that they themselves should serve as monitors. There is no evidence in our present data, however, to show that the absence of such a feeling of participation was a significant factor in creating negative attitudes toward instructional television. Other factors were probably of more significance.

9. There were few if any differences among institutions with respect to teachers' orientations to televised instruction. Teachers from the large state institution in our network seemed a bit more favorable than teachers at the smaller institutions, but the differences were not large and were not significantly different. There were no differences between Catholic and non-Catholic institutions with respect to faculty attitudes toward instructional television.

10. The degree to which our individual teachers felt themselves involved

in research has no apparent bearing on attitudes toward instructional TV. The individual who researches but who takes on teaching also still regards his teaching as a function of prime importance.

11. Our instructors who hold the Ph.D. were a bit more favorable to instructional television than were those who were teaching without benefit of the doctorate. This may be evidence that those with the doctorate are more secure and less defensive.

12. Among the teachers who participated actively in the presentation of televised courses there was a general enthusiasm for the TV mode of instruction. The data here, however, cannot be presented in any quantified form.

13. Of those who actually instructed on TV, almost all reported spontaneously that they missed, at least initially, the personal face-to-face feedback from students. All reported also, however, that they learned to get along without such feedback and were able eventually to imagine the response of their students to their teaching.

14. Many of the TV instructors felt themselves to be more personally exposed to their students through the television medium than they were in large lecture classes. They tended to have the feeling that students who could see them in televised close-ups could almost "read their minds,"
knowing very clearly whether or not they were interested in their subjects and interested in their students.

15. The majority of those who actually instructed on television reported that they felt to be the targets of their colleagues' aggression or hostility. There was something akin to perceived "rate-busting" involved, perhaps. The teachers who actually had participated in the preparation of televised courses were treated somewhat as traitors to the cause, or as collaborators

III.B. Institutional Factors in Reaction to Televised Instruction.

with the enemy of proper classroom teaching or, sometimes, as pedagogical exhibitionists.

In the original conceptualization of the present project, considerable thought was given to the likelihood that characteristics of the structure and functioning of the educational institutions would have a bearing on the reaction within those institutions to the kind of televised instruction made available through the network.

It soon became apparent that we would not be able to gather together extensive data on our eleven institutions and further, that even should we be able to gather the kind of data needed for an institutional approach to questions of acceptance of televised instruction, that our smallness of sample and intimacy of relationship would make it improper to delve very much into institutional factors in reaction to this kind of educational innovation.

Through interviews with administrators, through attendance at the meetings on various campuses in which problems connected with the TENP were discussed, it was possible to get considerable anecdotal and impressionistic evidence about institutional factors in reaction to the program. But there can be no definitive statements on the basis of such experiences and such unsystematic data.

We have seen, in the analysis of the responses on the part of the monitoring faculty to our questionnaire, that there were not very appreciable differences between faculty reaction at the large state university and at other institutions in the network. From the analysis of student data, to be dealt with later, it will be pointed out that student reactions also fail to vary greatly from one institution to another. (As we shall see there may be one exception to this in that students at one institution seem less favorable than students at all the others. Whether this difference is truly significant is questionable, however.)

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Through interviews with administrators, through attendance at the meetings on various campuses in which problems connected with the TEMP were discussed, it was possible to get considerable anecdotal and impressionistic evidence about institutional factors in reaction to the program. But there can be no definitive statements on the basis of such experience and such unsystematic data.

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It remains clear, however, that institutions do differ in their readiness to use the kinds of materials that can come to them over the network. The data in Table III.B. clearly indicate that some institutions more than others are willing to utilize televised instruction. There are probably a number of factors involved in such a willingness. Remaining in the realm of reasonable hypotheses are such notions that the acceptance of this kind of innovation will vary with many aspects of the structure of the institution and of the relation of the institution as a system with the larger community and larger social system in which it exists. One thinks for example that those educational institutions who feel themselves to be entirely unique in their educational mission, and who take pride in an apartness from the common run of educational institutions, will be reluctant to accept importations from a microwave network. One might continue to think also that those institutions who have difficulty recruiting adequate faculty would be more open to the use of the network offerings. Such an hypothesis, however, needs to be viewed with suspicion, for there is also some reason to believe that those institutions who have trouble recruiting faculty and who recruit faculty of less than first-rate quality may, under some circumstances, become defensive about the importation of pedagogical materials. These and many similar hypotheses remain purely in the hypothetical realm.

On the basis of facts and impressions the only truly defensible statement at the moment is that the use of the network facilities in our present institution seems to depend more on the firm backing of an administration than on any other factors involved. Naturally, the fact that strong administrative backing of the project could make a difference in its use in the various institutions is a testimony in itself concerning the nature of the social structure of some of the institutions. From what we know about faculty attitudes on this whole matter, we would surely expect, in those institutions characterised by faculty democracy, that the faculty would have turned out THEM long since.

TABLE III.B.

Total Enrollment by Institution, All TEMP Courses
1961-63

Institution	Fall 1961	Spring 1962	Fall 1962	Spring 1963	Fall 1963
	Dates				
1	1360	643	216	218	160
2	334	147	329	294	340
3	202	218	213	133	156
4	183	47	98	29	131
5	522	440	455	318	406
6	336	131	39	0	0
7	482	317	348	325	62
8	57	62	72	69	53
9	216	230	106	127	197
10	176	163	113	142	120
11	17	38	41	80	30
TOTAL	3885	2436	2030	1735	1655

III.C. TEMP STUDENT REACTION TO INSTRUCTIONAL TV.

In January 1962, questionnaires were mailed out to the instructors in each course* then in existence in the TEMP network, with the request that the instructors distribute these to students and have then fill out the questionnaires and return them to the TEMP research headquarters. The questionnaire form itself, a copy of which is presented in Appendix A, contained space for the recording of the customary face data and then 45 attitudinal items to which the student was asked to respond by choosing for each item one step on a six-point scale. The six points on each scale extended from "highly agree" to "agree" to "slightly agree" to "slightly disagree" to "disagree" to "highly disagree." This form for recording of answers to attitudinal answers is that used in the California F scale and in other well-known attitudinal and personality research instruments.

The items on the questionnaire were intended to fall into four general areas. First, it was intended to have items in the questionnaire to get the student to record, on a positive-negative dimension, his general attitudinal reactions to televised instruction. Then there was another class of items, distributed irregularly, as were all other classes of items throughout the questionnaire, which dealt with what might be described as administrative reactions to educational television. These items asked the student to record his impressions, for example, of the desirability of importing instruction to his campus or the likelihood that ITV was used to save teaching expenses. Then there were a number of items soliciting the students' reaction to a number of formal and procedural facets of televised instruction. Finally, there were a number of items bearing pretty directly on the personal relation between the student and the televised instructor or between the student and other instructors. In the latter category of items, there were some items bordering on personality variables in that they seemed likely to reflect the kind of relationship the student wishes, perhaps at unawares, to establish with his instructors.

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*The 8 courses then being offered were German, American History, Chemistry, Psychology, The Great Plains, Music Appreciation, Science for Elementary Teachers, and Algebra.

At the time the questionnaires were mailed out, the total enrollment in all TEMP courses was something over 3700. The return questionnaires from all institutions in all courses totaled 1936. Of this returned number, 1829 were sufficiently complete to code and to use in subsequent analytic procedures.

Table III.C. presents data comparing the sample of usable questionnaires returned with the population from which the sample was drawn. These data indicate the sample to be non-representative in some respects. The returns from institution No. 1 were relatively low, while those from institutions No. 7 and No. 10 were relatively very complete. With respect to returns from the various courses, there was only one potentially important difference between the sample and the population: the sample contained relatively few returns from students taking course No. 5. Since preliminary analysis of the data indicated relatively few significant variations in student responses from institution to institution or from course to course, the decision was made to include all usable questionnaires in the analysis rather than to reduce the size of the sample in order to have more representativeness with respect to these two population parameters. The fact that the sample does depart somewhat from representativeness, however, must be bore in mind in interpreting findings. Perhaps the more serious shortcoming of the sample is the fact that all of the Catholic institutions were more heavily represented in the sample than in the population. Where only 32.6% of the total TEMP enrollment came from Catholic schools, 50.8% of our sample were students from Catholic institutions. Again, because student responses do not vary appreciably from institution to institution, this departure from representativeness is probably not of any crucial importance. But it is there and must be considered, especially in interpreting selective bits of data.

The questionnaire data were first analyzed simply in terms of total responses to the 45 separate items. Next, through the use of the facilities of the University of Texas Computation Center and with the assistance of personnel from the Hogg Foundation of Mental Health, the data were subjected to a further analysis yielding point biserial correlations of every item with every other item on the questionnaire. In the following pages there will be first a presentation of the analysis of the responses of the total sample of 1829 students to each of the questions. Next we will turn to the somewhat more intricate analysis of interrelationships among the questionnaire items.

It will be well to examine the responses of our total population in terms of the four categories of items mentioned above. First, presented here are data on the total responses on the items that seem clearly to fall on a positive-negative attitudinal dimension; then will come items on administrative observations, on characteristics of the medium, and on personal orientation to the medium and to instructors.

TABLE IIIC

Compute %'s

CHARACTERISTICS OF SAMPLE OF STUDENTS RETURNING QUESTIONNAIRES

Male	930
Female	877

Freshmen	1004
Sophomore	492
Junior	203
Senior	105

Reported Grade Point Average All College Courses

A	35
B	909
C	702
D	75

Reported Probable Grade This Course

A	322
B	749
C	551
D	135

Need table comparing sample with Pop

TABLE III.C.

Comparison of Sample With Population of Temp Students

Enrollment in Institution Fall 1961	Population N	Population %	Sample N	Sample %
1	1360	35.00	379	20.72
2	216	5.56	158	8.64
3	57	1.47	37	2.02
4	183	4.71	104	5.69
5	334	8.60	27	1.48
6	202	5.20	115	6.29
7	522	13.44	274	14.98
8	17	.44	16	.87
9	336	8.65	142	7.76
10	482	12.36	418	22.91
11	176	4.53	159	8.69
TOTAL	3885		1829	

Enrollment in Courses Fall 1961	Population N	Population %	Sample N	Sample %
1	599	15.42	344	18.81
2	483	12.43	273	14.93
3	494	12.72	138	7.55
4	117	3.01	70	3.83
5	1200	30.89	501	27.45
6	656	16.89	302	16.51
7	148	3.81	82	4.48
8	188	4.84	119	6.51
TOTAL	3885		1829	

III.C.1. Responses of All Students to All Attitudinal Items.

Table III.C.1. contains data on the responses of all students to all attitudinal items on the TEMP questionnaire. For each item there is, at the far right, the mean of 1829 responses, with the mean calculated on the basis of treating the 6-categories of responses as a six point scale, with HA or highly agree = 1, A or agree = 2, and so on. Also presented are the percentages responding in each of the six categories.

The data in Table III.C.1. will be discussed later under what appear to be meaningful and manageable rubics. They are presented here in this complete form simply "for the record": anyone having a particular interest in any one or in any specific array of items can find the relevant detailed information in Table III.C.1.

I

TABLE III.C.1.

RESPONSES OF 1029 TEMP STUDENTS TO 45 ATTITUDINAL ITEMS ON TELEVISED INSTRUCTION

Items	Per cent responding in each category HA*	A*	SA*	SD*	D*	HD*	Mean, on 6 point scale (HA=1, HD=6)
① Given a choice between taking the same course from the same instructor on TV or in a large lecture class, I'd choose the TV.	10.5	20.6	13.1	11.0	24.2	20.2	3.77
2. Instruction by TV is especially bad because students should have personal contact with the teacher who will be giving the exam.	19.4	26.4	29.8	15.3	16.0	3.9	2.93
3. TV instruction is especially poor in that students should have a teacher in class with them to make them pay attention.	3.6	7.2	11.7	12.7	41.3	23.1	4.49
4. Instruction on TV is likely to be better than live instruction because the serious student has fewer distractions in TV class than in other classes.	4.7	14.3	16.1	18.2	29.4	17.2	4.04
5. TV instruction is likely to be poor because the TV instructor can't know anything about the personal problems of his students.	12.7	26.1	22.1	12.6	13.8	6.2	3.15
6. TV instruction represents an attempt to save money on teaching staff.	4.4	13.2	13.5	15.5	37.4	13.9	4.04
7. TV instruction is objectionable in that the student can't learn much about the personal characteristics of the instructor.	3.1	11.9	16.3	17.2	34.6	15.0	4.07
8. Although some students may dislike TV instruction, I myself think it a fine idea.	8.0	19.4	18.9	11.8	19.7	20.9	3.75
9. If a friend of mine had a choice of taking this course either over TV or in a large lecture section, I'd recommend that he take it over TV.	8.6	17.1	15.6	11.2	25.2	20.9	3.86

*HA - Highly Agree
* A - Agree
*SA - Slightly Agree
*SD - Slightly Disagree
* D - Disagree
*HD - Highly Disagree

II

TABLE III.C.1. (continued)

RESPONSES OF 1829 TEMP STUDENTS TO 45 ATTITUDINAL ITEMS ON TELEVISION INSTRUCTION

Items	HA*	A*	SA*	SD*	D*	HD*	Mean, on 6 point scale (HA=1, HD=6)
	Per cent responding in each category						
10. Seriously interested students will probably learn more from a televised course than from a lecture course.	6.0	12.1	15.8	21.0	28.1	15.4	4.11
11. This televised course is probably as good as any course in this subject taught anywhere in the country.	7.9	25.3	16.6	13.6	20.7	13.8	3.50
12. During the semester there were many questions I wanted to ask the television instructor.	27.2	33.2	20.0	7.8	9.5	1.1	2.39
13. Material presented in a lecture is easier to remember than material presented on TV.	17.4	28.4	17.6	16.2	14.8	4.4	2.92
14. One serious difficulty with televised instruction is that the television teacher does not give hints about what questions will be given on exams.	8.5	20.3	22.0	15.6	24.4	7.3	3.44
15. I find that I cannot truly respect a teacher unless he is there in class in person.	2.6	5.5	8.4	13.6	40.2	28.4	3.76
16. One advantage of television is that it can make points clearer through the use of visual aids and demonstrations.	23.8	35.4	17.0	7.4	10.1	5.1	2.57
17. I dislike classes in which I can't ask questions of the teacher.	23.8	31.1	24.8	8.4	8.9	2.0	2.50
18. I found this televised course easier than most college courses I've had.	2.5	8.7	12.9	19.7	32.2	22.3	4.32
19. The local teacher who sits in on the television course obviously dislikes it.	4.8	7.4	13.8	18.8	34.7	16.5	4.08
20. TV instruction might be good for some students but as for me, I am strongly opposed to it.	19.4	16.3	14.3	15.9	22.7	10.2	3.33

TABLE III.C.1. (continued)

RESPONSES OF 1829 TEMP STUDENTS TO 45 ATTITUDINAL ITEMS ON TELEVISION INSTRUCTION

Items	Per cent responding in each category						Mean, on 6 point scale (HA=1, HD=6)
	HA*	A*	SA*	SD*	D*	HD*	
21. The impersonalness of television instruction makes me dislike it.	4.9	14.3	21.2	18.1	31.4	8.4	3.77
22. A serious difficulty with television instruction is that it does not allow students to take notes.	8.4	13.7	14.4	18.5	30.9	18.3	3.95
23. If a friend of mine had a choice of taking this course over TV or in a lecture section, I'd recommend that he take the lecture section.	22.8	29.7	14.4	13.3	13.5	4.7	2.75
24. A serious difficulty with television instruction is that the student cannot learn what the television instructor thinks is important.	6.6	19.8	20.9	17.9	26.0	8.0	3.43
25. For me, television just naturally seems better for entertainment than for learning.	8.8	17.8	19.1	18.9	26.3	7.4	3.52
26. Students who are seriously interested in the subject would probably learn more in a lecture course than from a televised course in the same subject.	15.8	29.2	17.8	15.5	16.0	4.0	2.94
27. Almost any kind of television program sort of hypnotizes me so that I can't help paying attention.	1.5	5.2	14.1	19.0	39.7	18.6	4.41
28. During the semester I felt that I was getting pretty well acquainted with the instructor on television.	2.7	19.2	26.8	18.0	23.0	8.4	3.57
29. In most of my classes I often ask questions of the teacher.	10.1	34.2	27.0	12.8	12.6	1.9	2.85
30. I feel that I have learned more from this televised course than from many courses I've had in college.	15.9	6.6	13.8	20.9	31.0	24.1	4.34

TABLE III.C.1. (continued)

RESPONSES OF 1829 TEMP STUDENTS TO 45 ATTITUDINAL ITEMS ON TELEVISION INSTRUCTION

Items	Per cent responding in each category HA*	A*	SA*	SD*	D*	HD*	Mean, on 6 point scale (HA=1, HD=6)
31. It is not a good thing for this institution to try to "import" instructors via television to teach its courses.	9.0	14.9	16.4	22.6	25.5	9.7	3.64
32. Televised instruction is likely to be humorless instruction.	6.1	18.5	17.9	21.3	25.7	8.9	3.64
33. I feel that the television instructor is a complete stranger to me.	7.3	17.1	19.4	27.0	23.6	4.4	3.52
34. A lecture course is likely to be more difficult than the same course taught by TV.	2.2	12.6	15.3	26.9	32.7	8.7	3.96
35. Presentation of material by a lecturer is likely to be more orderly and thorough than is a televised presentation.	6.7	14.5	10.3	25.7	30.1	10.8	3.85
36. This televised course was as difficult as any I've ever had.	12.2	26.2	16.5	18.9	18.4	5.7	3.12
37. Through the use of television it is possible for students anywhere to be exposed to the country's best teachers.	29.3	48.5	13.7	3.7	2.5	.7	1.99
38. Teachers selected to present courses on television are likely to be better than those who are not selected.	13.9	38.0	19.2	10.4	12.1	4.6	2.78
39. Although there may be some advantages in televised instruction, there can be nothing better than personal contact with a classroom teacher.	23.5	31.8	25.6	10.5	5.9	1.2	2.42
40. This institution certainly has no need to "import" teachers from other schools.	14.9	24.4	16.9	20.3	15.0	6.0	3.07
41. I find it very difficult to pay attention to televised instruction.	11.6	16.7	20.4	16.6	26.9	6.5	3.46

TABLE [illegible].1.(continued)

RESPONSES OF [illegible] STUDENTS TO 45 ATTITUDINAL ITEMS ON TELEVISION INSTRUCTION

Items	Per Cent responding in each category HA*	A*	SA*	SD*	D*	HD*	Mean, on 6 point scale (HA=1, HD=6)
42. I think that the use of television instruction can make a significant improvement in instruction on this campus.	4.3	16.1	27.3	22.4	20.0	7.4	3.93
43. Television instructors are likely to be more thoroughly prepared than are classroom lecturers.	11.8	30.6	30.7	13.3	11.6	3.3	2.87
44. I often felt that the television instructor was talking directly to me.	2.2	13.3	20.6	23.6	27.9	10.7	3.63
45. I find I can't really learn a subject unless I have frequent personal contact with the teacher.	5.9	14.5	23.4	24.6	25.0	5.0	3.59

*HA - Highly Agree
* A - Agree
*SA - Slightly Agree
*SD - Slightly Disagree
* D - Disagree
*HD - Highly Disagree

III.C.2. Responses on the Positive-Negative Dimension.

There were 6 items among the 45 items in the questionnaire that seemed to tap pretty directly the student's feeling, on a positive-negative dimension, about the particular televised course he was experiencing. These were items 1, 8, 9, 11, 20, and 23 in the questionnaire, and these items are pulled out and presented separately in Table III.C.2.

The general burden of the data in Table III.C.2. is that students are somewhat on the negative side of things with respect to televised instruction. At least our method of securing data from these students, in the situation in which we found them, yielded answers falling somewhat pretty consistently to the negative side of neutral in attitudes toward ITV.

These data may be interpreted in either of two ways: in the absence of data on how these same students would react under controlled circumstances to similar instruction in a large lecture hall, we can make a case that there is here evidence of relatively good enthusiasm for instructional television. For example, approximately 46% of our students agree to some extent to the statement that "I myself think it a fine idea." (Item 8). Though there is an absence of directly comparable data, one would somehow doubt that you would get anymore enthusiastic endorsement than this of the general idea of large lecture classes. Though we have no basic and general data on the point, one might well suspect that the stress and frustration involved in any college class would induce students, when given a safe and anonymous opportunity to express themselves, to vent the spleen at least a bit.

Similarly, in responding to the responses to item 1, one can take the position that here is evidence of a relatively very favorable reaction to televised instruction. If one makes the assumption that students are idealizing whatever it is with which they are comparing TV instruction, then to have almost half of them agree that they would choose TV, with the

TABLE IIIC 2

Responses of 1845 TEMP Students to Six Positive-Negative Attitudinal Items on Televised Instruction

Items	Percent responding in each category						Mean, on 6 point scale (HA=1, HD=6)
	HA*	A*	SA*	SD*	D*	HD*	
1. Given a choice between taking the same course from the same instructor on TV or in a large lecture class, I'd choose the TV.	10.5	20.6	13.1	11.0	24.2	20.2	3.77
8. Although some students may dislike TV instruction, I myself think it a fine idea.	8.0	19.4	18.9	11,8	19.7	20.9	3.75
9. If a ffiend of mine had a choice of taking this course either over TV or in a large lecture section, I'd recommend that he take it over TV.	8.6	17.1	15.6	11.2	25.2	20.9	3.86
11. This televised course is probably as good as any course in this subject taught anywhere in the country.	6.0	12.1	15.8	21.0	28.1	15.4	4.11
20. TV instruction might be good for some students but as for me, I am strongly opposed to it.	19.4	16.3	14.3	15.9	22.7	10.2	3.33
23. If a friend of mine had a choice of taking this course over TV or in a lecture section, I'd recommend that he take the lecture section.	22.8	29.7	14.4	13.3	13.5	4.7	2.75

*HA = highly agree
A = agree
SA = slightly agree
SD = slightly disagree
D = disagree
HD = highly disagree

instructor held constant, in preference to a large lecture class, represents something of a victory for TV. When you combine the actual data (~~with~~ and such a rationalization of them) with the data on item 11, the evidence for a relatively favorable response builds up. Almost exactly half of the students agree to some extent with the statement "This televised course is probably as good as any course in the subject taught anywhere in the country" one is disinclined to believe that such a statement will be accepted by half the students in very many individual courses in very many of the institutions represented in any of the TEEP institutions of higher learning.

Before we jump to any firm conclusion however concerning positive student enthusiasm for ITV, we may need to look at the responses to items 9 and 23. In item 9, only 41 per cent of our respondents said that they would recommend to a friend that they take this particular course over TV rather than over a lecture, and in item 23, 67%, when given a reversal of the same item, report that they would recommend to a friend the lecture section rather than a TV section. It may be that the apparent discrepancy between these two items and some of the others here is due to some discrepancy between the attitudes of students who have actually taken a televised course and the attitudes toward television that they think are prevalent on a given campus. It may be that students who have had a TV course are relatively favorably disposed toward it but are not so enthusiastic that they are likely to want to convince a hostile or negative friend that he should take courses by television. There are data in other studies, which we have already seen, showing how drastically student attitudes can change once they have actually had exposure to real television. We also have data from one of our later studies in the present project to show that students change very drastically their attitudes toward television after they have had a concrete exposure to it. It is unfortunate that we do not have base data from students on the various campuses who have not been exposed to television, data with which we can compare our present data.

When we come later to the analysis of interaction among our questionnaire items, perhaps we can clarify somewhat not only the extent of the favorable or unfavorable attitude toward television but can begin to throw a little light on the bases for both positive and negative student orientations.

III.C.3. Responses Concerning Administrative Aspects of Instructional Television.

It may seem strange that anyone would ask students to make observations of what is essentially the administrative level of any form of instruction, but when stated a bit differently, it seems quite reasonable that one should expect students to think in more general and more abstract terms about their own education. At any rate, data in Table III.C.3. present student reactions to seven items appearing to bear on general administrative aspects of instructional television.

Perhaps the most striking thing about the data in Table III.C.3. is the fact that something over 90% of the students agree to the assertion that television makes it "possible for students anywhere to be exposed to the country's best teachers" and that 71% agree with the proposition that "teachers selected to present courses on television are likely to be better than those who are not selected". These two items appear clearly to indicate that students are ready to accept the proposition that "master teachers" can be brought into televised instruction. These particular students are obviously not quite so willing to accept the proposition that "master teachers" have been brought to them over the TEMP network. Certainly there are many different grounds upon which students can be expected to rate the excellence of a teacher, and perhaps not all bases for a student's judgment of a teacher as excellent are, on pedagogical grounds, equally valid. Anyone would be inclined to believe that unless they were under the influence of some kind of fad or similar mass phenomenon, students would be unlikely to agree among themselves concerning who or what is a good teacher. And one doubts very much that if both students and faculty members were asked about the quality of the performance of a particular teacher, they would show much of a tendency to agree one with another. We have here, at any rate, evidence that students do accept the notion that it is at least theoretically profitable to gain an exposure to the nation's best teachers through instruction on TV.

Another aspect of the data here is that there is an absence of clear evidence of any powerful resentment of "imported instructors." The data are a little conflicted, perhaps due to response-set, (in the present case the tendency of some students to agree with almost any statement presented to them). On item 31 students tend to disagree with the statement that it is "*not* a good thing for this institution to try to import instructors," but, on item 44 they tend to agree to the proposition that their own institutions has no need to "import teachers from other schools." Neither of these items yields data preponderantly in one direction, however. Certainly one cannot make the case that the students around the TEMP network are violently resistant to "imported" instruction. Such an interpretation of our present data is very much in line with those from the Oregon study (op. cit.).

TABLE IIIC 3

Responses Concerning Administrative Aspects of Instructional Television

Items	Per cent responding in each category HA*	A*	SA*	SD*	D*	HD*	Mean, on 6 point scale (HA=1, HD=6)
6. TV instruction represents an attempt to save money on teaching staff.	4.4	13.2	13.5	15.5	37.4	13.9	4.04
10. Seriously interested students will probably learn more from a televised course than from a lecture course.	6.0	12.1	15.8	21.0	28.1	15.4	4.11
31. It is not a good thing for this institution to try to "import" instructors via television to teach its courses.	9.0	14.9	16.4	22.6	25.5	9.7	3.64
37. Through the use of television it is possible for students anywhere to be exposed to the country's best teachers.	29.3	48.5	13.7	3.7	2.5	.7	1.99
38. Teachers selected to present courses on television are likely to be better than those who are not selected.	13.9	38.0	19.2	10.4	12.1	4.6	2.78
40. This institution certainly has no need to "import" teachers from other schools.	14.9	24.4	16.9	20.3	15.0	6.0	3.07
42. I think that the use of television instruction can make a significant improvement in instruction on this campus.	4.3	16.1	27.3	22.4	20.0	7.4	3.53

*HA = Highly agree
* A = Agree
*SA = Slightly Agree
*SD = Slightly disagree
* D = disagree
*HD = Highly disagree

III.C.4. Items Tapping Observations on Characteristics and Functions of Televised Instruction:

Table III.C.4. contains items tapping students' observations about the technical or procedural aspects of televised classes. The items in the table are arranged in three segments. First, there are items that seem to ask the student to evaluate the many alleged advantages and disadvantages of televised instruction.

The first five items in Table III.C.4. give the student an opportunity to register his feelings about some of the alleged advantages of televised instruction. It is quite clear that students do not by any manner of means tend to agree strongly that television frees the student from distraction. They do pretty strongly agree that the use of visual aids in demonstrations can be a marked advantage in television. They do agree that it is possible to get the country's best instruction by TV, as we have seen earlier. They do agree that teachers selected for televised courses are likely to be better than are those who are not selected, and they tend to agree with equal strength that television instructors are likely to be more thoroughly prepared than are the lecturers in the classroom. They do not agree, on item 30, that they learn more from this televised course than from "many courses I've had in college". But here one is making certain assumptions about student motivations when he lists such an item with those above it that are labelled "positive". Perhaps also the fact that 37% of the students do agree that they have learned more from this particular televised course than from "many courses I've had" is to be taken as fairly strong endorsement of the televised courses. It is one out of perhaps fifteen courses they have had by the time they have taken this one.

In the lower part of Table III.C.4., are data on responses to those items giving the student the opportunity to record his observations on some of the alleged disadvantages of televised instruction.

Of the items in Table III.C.4. allowing students to express the strength of their feeling about alleged disadvantages of televised instruction, the most clear-cut data, perhaps, are those in response to item 2 wherein approximately three-fourths of the students agree to some extent to the statement that "instruction by TV is especially bad because students should have personal contact with the teacher who will be giving the exam."

This item probably elicits a good deal of agreement because it taps two kinds of attitudes on the part of students. There is the notion of "personal contact" and also the idea of someone giving an exam. As later data will show, students very generally report themselves desirous of personal contact with the teacher; and there is a good deal of evidence here and in other items in Table III.C.4. bearing on something that might be described as "test anxiety". Many students report individually that they are awfully nervous when a stranger is actually laying out the lecture material while a local instructor is the one who is making up the examinations. They feel that they are being deprived of necessary social cues that may have a great deal to do with their academic survival. The results of item 14 bear on this kind of matter. Here, where there is a bald statement about the teacher "giving hints about exam questions", only 51% of the students agree that the absence of the hint-giving teacher is a serious difficulty with televised instruction. And similarly, when the item says that television does not allow the student to "know what the television instructor thinks is important" approximately only one half of the students give their assent to this kind of thing as a disadvantage. Perhaps again there is too much baldness or bluntness in the phrasing of the question to elicit the kind of anxiety about tests that can be tapped by less direct questions and that can easily be stimulated when the student has to contend with a televised instructor who does not give exams plus a local instructor who does.

Students do not feel--or certainly do not admit to a feeling--that they need a teacher in class to "make them pay attention" (item 3). In interviews students frankly admit that they do need a teacher in class to make them pay attention and that in the absence of someone to make them pay attention they are likely to go to sleep or they are likely to lead a fantasy life and drift off into other worlds. But when asked face to face about such a matter, only about 22% give their assent to the notion that the students should have a teacher in class to make them pay attention. Here perhaps we have evidence that the matter of a student's personal relation to a teacher is a very personal and perhaps a conflicted one, with some of its facets lying beyond conscious awareness. If so, the problem will need to be studied by methods, such as projective devices, that can tap some of the latent or non-edited feelings of the students.

There is no strong tendency at all for students to agree that the local TV instructor dislikes the television course. To a number of observers of the TEMP operation in its early stages, it seemed a reasonable hypothesis that local instructors were denigrating the course and that they might well start a general infection among their students concerning it, so that the whole project might very well lead to bitter student resentment. It is pretty clear that this was not the case. Only 26% of the students reported that they agreed to any extent with the statement that the local teacher dislikes the course. At least this holds for the students who returned the questionnaires. It remains a possibility that the teachers who were most opposed to the project did not have the questionnaires filled out and did not return them to TEMP headquarters.

There is some tendency among the students to agree that television presents difficulty in that it does not allow the students to take notes, and approximately 45% of the students agree to the statement that televised instruction is likely to be humorless instruction. Nearly half of the students report that they found it difficult to pay attention to televised instruction, but only 21% agree that there is any "hypnotic" kind of effect.

TABLE IIIC 4

Responses of 1845 TEMP Students to Items Concerning Technical and Procedural Aspects of Televised Instruction

	Items	Per cent responding in each category						Mean, on 6 point scale (MA=1, MD=6)
		MA*	A*	SA*	SD*	D*	MD*	
4.	Instruction on TV is likely to be better than live instruction because the serious student has fewer distractions in TV class than in other classes.	4.7	14.3	16.1	18.2	29.4	17.2	4.04
16.	One advantage of television is that it can make points clearer through the use of visual aids and demonstrations.	23.8	35.4	17.0	7.4	10.1	5.1	2.57
18.	I found this televised course easier than most college courses I've had.	2.5	8.7	12.9	19.7	32.2	22.3	4.32
30.	I feel that I have learned more from this televised course than from many courses I've had in college.	15.9	6.6	13.8	20.9	31.0	24.1	4.34
	Presentation of material by a lecturer is likely to be more orderly and thorough than is a televised presentation.	6.7	14.5	10.3	25.7	30.1	10.8	3.85
	Teachers selected to present courses on television are likely to be better than those who are not selected.	13.9	38.0	19.2	10.4	12.1	4.6	2.78
	Television instructors are likely to be more thoroughly prepared than are classroom lectures.	11.8	30.6	30.7	13.3	11.6	3.3	2.87
2.	Instruction by TV is especially bad because students should have personal contact with the teacher who will be giving the exam.	19.4	26.4	29.8	15.3	16.0	3.9	2.93
	TV instruction is especially poor in that students should have a teacher in class with them to make them pay attention.	3.6	7.2	11.7	12.7	41.3	23.1	4.49

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TABLE IIIC 4 (Continued)

Items	Per cent responding in each category						Mean, on 6 Point scale (HA=1, HD=6)
	HA*	A*	SA*	SD*	D*	HD*	
5. TV instruction is likely to be poor because the TV instructor can't know anything about the personal problems of his students.	12.7	26.1	22.1	12.6	13.8	6.2	3.15
14. One serious difficulty with televised instruction is that the television teacher does not give hints about what questions will be given on exams.	8.5	20.3	22.0	15.6	24.4	7.3	3.44
19. The local teacher who sits in on the television course obviously dislikes it.	4.8	7.4	13.8	18.8	34.7	16.5	4.08
22. A serious difficulty with television instruction is that it does not allow students to take notes	8.4	13.7	14.4	18.5	30.9	18.3	3.95
24. A serious difficulty with television instruction is that the student cannot learn what the television instructor thinks is important.	8.6	19.8	20.9	17.9	26.0	5.0	3.43
27. Almost any kind of television program sort of hypnotises me so that I can't help paying attention.	1.5	5.2	14.1	19.0	39.7	18.6	4.41
32. Televised instruction is likely to be humorless instruction.	6.1	18.5	17.9	21.3	25.7	8.9	3.64

*HA = Highly agree
* A = Agree
*SA = Slightly agree
*SD = Slightly disagree
* D = disagree
*HD = Highly disagree

III.C.5. The Perceived Difficulty of the TV Courses.

Items in Table III.C.5. deal with student reactions to the perceived difficulty of the televised courses to which they were exposed. For a number of reasons, the students reaction to the level of difficulty of the course is an important matter. Those who stage televised instruction do considerable worrying about whether or not they are "pitching" their material at the right intellectual level for the audience—the potentially vast and always unseen audience. There may be differences from institution to institution in general rate of presentation of material or the general intellectual level at which it is customary to present the material or the amount of material covered during a semester. Also one is probably very justified in making the assumption that a student's perceived difficulty of course has something to do with the friendliness of his reaction toward it. Students sometimes report that they really enjoy a very tough course. But one doubts that they will, when given anonymous opportunity, report that they really did enjoy a course that seemed to be above their intellectual heads—not when they must pass an examination in it.

The data in Table III.C.5. generally bear out the fact that the TEMP courses were judged by students as relatively difficult. For example, on item 36, 56% of the students seem to agree that their televised course "was as difficult as any I've ever had." Our data do not allow us to trace down the source of this perceived difficulty in televised instruction. It may be a good guess, however, that the rate at which material is covered in the typical televised course, as compared with the more informal and less highly organized lecture course, makes for the appearance of difficulty. If the instructor is laying out for the student many units of intellectual content per period of time, and if there are no breaks for the catching of the intellectual breath, or for humor, or for "commercials", or for anything else, then the student is actually required to pay close and perhaps laborious attention for protracted periods of time. Perhaps the serious student would like this rapid pacing of the material in his courses, but our 1829 students do not see it that way. On item 26, approximately two thirds of the respondents agree to some extent that serious students are likely to learn more in a lecture course than from a televised course. This, combined with the data above, clearly indicates a perceived ~~wide~~ high level of difficulty.

Perhaps we need some serious exploration of the meaning, in the eyes of students, of "difficult courses". Surely there are some courses regarded as difficult that the students accept as very valuable and that require and get the best effort from them. The other courses regarded as difficult are very assiduously avoided because they are perceived as difficult. What are the differences between such courses? What are the factors contributing to perceived difficulty and under what circumstances is perceived difficulty not a deterrent? And under what conditions does perceived difficulty serve positive and negative motivational purposes? Those are questions that properly designed research might well answer, and perhaps the answering would be worth the trouble it would entail.

TABLE I[illegible] 5

Responses of 1845 TEMP Students to Items Concerning the Difficulty of Televised Courses

Items	Per cent responding in each category						Mean, on 6 point Scale (HA=1, HD=6)
	HA*	A*	SA*	SD*	D*	HD*	
13. Material presented in a lecture is easier to remember than material presented on TV.	17.4	28.4	17.6	16.2	14.8	4.4	2.97
18. I found this televised course easier than most college courses I've had.	2.5	8.7	12.9	19.7	32.2	22.3	4.32
26. Students who are seriously interested in the subject would probably learn more in a lecture course than from a televised course in the same subject.	15.8	29.2	17.8	15.5	16.0	4.0	2.94
34. A lecture course is likely to be more difficult than the same course taught by TV.	2.2	12.6	15.3	26.9	32.7	8.7	3.96
36. This televised course was as difficult as any I've ever had.	12.2	26.2	16.5	18.0	18.4	5.7	3.12

*HA = Highly agree
* A = Agree
*SA = Slightly agree
*SD = Slightly disagree
*D = Disagree
*HD = Highly disagree

III.C.6. Items Relating to Personal Relations Between Students and Teachers.

One of the most frequent complaints students have about televised instruction, in the researches reviewed earlier and in the preliminary interviews connected with our own project, was that television is "impersonal". They go about stating this kind of objection in many ways, but conversations, interviews and questionnaires all add up to the hypothesis that the student wants some kind of personal relationship with the teacher and is very definitely afraid, if he has not had any televised instruction, that ITV will remove him from personal contact with the teacher. And while he is taking a television course, he still seems inclined to compare his situation there with an ideal situation in which he has the kind of personal attention he desires from the instructor. While not all students really and in reality wish to engage in an intimate relationship with an instructor, the ideal--perhaps a stereotyped one--is there and it is this ideal with which televised instruction is likely to be compared.

Perhaps in the data in Table III.C.6. there can be found a conflict or an inconsistency between an ideal picture and what the student actually feels and experiences. Take the responses to item 39, in which approximately four-fifths of our students give some assent to the statement "although there may be some advantages to televised instruction, there can be nothing better than personal contact with the classroom teacher." Certainly if one watches the behavior of students in most large or even medium sized lecture classes, he would not find that 81% of the students are behaving in such a way as to establish any visibly personal contact with the classroom teacher. Along this same line, the data on the responses to item 29 are perhaps relevant. Here over 70 of the respondents report that "In most of my classes I often ask questions of the teacher". This, to many teachers, will seem baldly erroneous. Not only is it true that very few students ask questions in lecture courses but it would be obviously a bedlam in many lecture courses if 70% of the students often asked questions of the teacher. Relatedly, on Item 12, 80% of the respondents reported that they wanted to ask questions of the instructor and, on Item 17, an equivalent number report that they dislike classes in which they cannot ask questions of the teacher.

What does all this mean? One gets a feeling here that the students really are wishing for some benignly personal contact with an avuncular teacher, that they do have a picture of personal discourse, both comfortable and stimulating, with a teacher, and that they frequently see television as a medium that cuts off the possibility of establishing this kind of person-to-person relationship. In actuality, most teachers will report that such personal contact does not occur in large lecture sections, and that many students "freeze" when they are brought into seminar situations where there can be intimate exchange between teacher and student and between students and students; many a student is paralyzed with fear at such intimacy and at the accompanying likelihood that his ignorances will be revealed. It may be that our present data are in a line with the general interpretation suggested in the various sections of the present report: many students want a personal relationship with a benign, kindly, devoted and sacrificing older person who will take them by the hand and lead them gently and painlessly into the ways of higher learning. At the level of the ideal~~s~~, and perhaps also with accompanying stereotypy, there are many teachers who reciprocate this kind of yen and yearning. But in all reality, it seems likely that such a relationship is rarely established and there are many who would doubt that the suggested kind of dependency on the part of the student is conducive to growth of either the student or the instructor.

However all this may be, it seems patently obvious that the personal relationship between the student and the teacher is an important matter both for the student's general attitude toward television and for the general advancement of education itself. And it is this kind of relationship that will deserve intensive study on the part of educational researchers. Our own data here do bear on the matter but do not illumine it with any finality.

Our data do give some interesting bits of enlightenment, however. For example, contrast the responses to Item 5 with the responses to Item 7. Where 61% of our students agreed to some extent that "It's unfortunate in televised instruction that the instructor cannot know anything about the personal problems of the students," only 31% worry themselves about the fact that the student, in televised situations, can't learn much about the personal characteristics of the instructor. It is not certain, of course, whether this is due to the fact that the student does feel he is learning a good deal about the instructor through the sometimes intimate and revealing exposure he receives through his television screen, or whether he if fairly indifferent to the personal characteristics of the instructor—except as those characteristics may bear on the matter of what questions will turn up on the final exam. Perhaps the student is never quite as interested in the instructor as he hopes the instructor is interested in him. And perhaps also, there is something in the above assertion that television, in spite of the alleged impersonalness of it, can give the student a very personal exposure to the instructor. For example, in the responses to Item 28 in Table IIIC 6, about half of the students report that they felt they were getting pretty well acquainted with the instructor on television. One is likely to feel that this would compare favorably with a similar figure involving students in a large lecture section. Relatedly, there are the responses to Item 44 in which over a third of the respondents agreed that they often felt that the television instructor was talking directly to me." This too would perhaps compare favorably with answers from students in a large lecture section.

This matter of the personalness of the relationship between student and teacher will concern us further in sections of the present report.

TABLE IIIC 6

Responses of 1829 TEMP Students Relating to Student-Teacher Relations

Items	Per cent responding in each category						Mean, on 6 point scale (HA=1, HD=6)
	HA*	A*	SA*	SD*	D*	HD*	
2. Instruction by TV is especially bad because students should have personal contact with the teacher who will be giving the exam.	19.4	26.4	29.8	15.3	16.0	3.9	2.93
5. TV instruction is likely to be poor because the TV instructor can't know anything about the personal problems of his students.	12.7	26.1	22.1	12.6	13.8	6.2	3.15
7. TV instruction is objectionable in that the student can't learn much about the personal characteristics of the instructor.	3.1	11.9	16.3	17.2	34.6	15.0	4.07
12. During the semester there were many questions I wanted to ask the television instructor.	27.2	33.2	20.0	7.8	9.5	1.1	2.39
15. I find that I cannot truly respect a teacher unless he is there in class in person.	2.6	5.5	8.4	13.6	40.2	28.4	3.76
17. I dislike classes in which I can't ask questions of the teacher.	23.8	31.1	24.8	8.4	8.9	2.0	2.50
21. The impersonalness of television instruction makes me dislike it	4.9	14.3	21.2	18.1	31.4	8.4	3.77
24. A serious difficulty with television instruction is that the student cannot learn what the television instructor thinks is important.	8.6	19.8	20.9	17.9	26.0	5.0	3.43
28. During the semester I felt that I was getting pretty well acquainted with the instructor on television.	2.7	19.2	26.8	18.0	23.0	8.4	3.57

TABLE IIIC 6 (Continued)

Items	Per cent responding in each category						Medians on 6 point scale (HA=1, HD=6)
	HA*	A*	SA*	SD*	D*	HD*	
29. In most of my classes I often ask question of the teacher.	10.1	34.2	27.0	12.8	12.6	1.9	2.85
39. Although there may be some advantages in televised instruction, there can be nothing better than personal contact with a classroom teacher	23.5	31.8	25.6	10.5	5.9	1.2	2.42
44. I often felt that the television instructor was talking directly to me	2.2	13.3	20.6	23.6	27.9	10.7	3.63
45. I find I can't really learn a subject unless I have frequent personal contact with the teabher.	5.9	14.5	23.4	24.6	25.0	5.0	3.59

*HA = Highly agree
* A = Agree
*SA = Slightly agree
*SD = Slightly disagree
* D = Disagree
*HD = Highly disagree

III.C.7. [illegible]ic Data on Free Response Question Concerning Advantages and Disadvantages of Televised Instruction.

At the end of the questionnaire each student was asked the following two questions: 1) "On the basis of your experience with televised instruction, what would you say are its chief advantages?" and 2) "its chief disadvantages?" They were given an opportunity to write down the advantages and disadvantages and their responses were coded in a system of categories that seemed best to fit the data. These data are presented in Table III C 7.

A total of 1829 students completed this question and data from these are presented in the Table, arranged in the order of frequency of mention first of advantages and then of disadvantages.

It may be noteworthy that these students mentioned a total of 4265 disadvantages and 3586 advantages. That they should mention 679 more disadvantages than advantages may be a commentary on educational television or a commentary on the general plight of modern American college students. We do not know how many disadvantages as compared to advantages he would sight with respect to any other kind of instruction he might be receiving in college. Certainly anyone who has found a way of getting the students to talk freely about college experiences, find not very many of them able to report experiencing anything approximating ecstatic intellectual pleasure with their course work or with any aspect of the purely academic enterprises. One gets the impression that going to college is a fairly tough kind of proposition all around, and that many college students covertly or otherwise think that college would be fine if it weren't for courses and professors. Actually no student will say this very explicitly, but the amount of general dissatisfaction with courses of any kind seems to be relatively high. Perhaps we do in fact need to do some thinking and perhaps some research on the dimensions of the factors contributing to this general kind of unhappiness with college life. Certainly it has a bearing on the highly regrettable phenomena of drop-outs and of second rate performance on the part of many students who do not drop out but yet who function at less than their peak effectiveness during their college years.

It may be possible to do some interlinear intuiting on the basis of our present data and make some guesses as to the nature of unhappiness with televised instruction—which very probably represents unhappiness also with any kind of instruction. Along this line, one cannot find among the mentioned advantages any item that seems likely to produce for the student any highly charged involvement in the educational process, televised or otherwise, nor to represent any full commitment to anything. When one looks at the disadvantages, by contrast, one easily can read in between these lines some kind of basic yen, realistic or otherwise, for a more vital experience than students are experiencing. It has been seen earlier that students may make much to much of the fact that they cannot ask questions in class. But among the listed disadvantages, the fact that questions cannot be asked leads all the rest. Perhaps this fact stands for more than it says. When the number of students (790) who mention this as a disadvantage are combined with the 505 who report that television is too impersonal in that the teacher cannot react to students and, further, with the 150 who report that television is too impersonal in that the student cannot react to the teacher, we have evidence, perhaps, for a very strong desire on the part of the student for some kind of intimate involvement in the educational process, an involvement that he does not feel in televised courses and, perhaps, as far as we know, to no greater extent in any of his courses. In the light of the logistics of modern education, it may be hopeless to expect that students in introductory courses ~~to~~ can have any kind of experience of intimacy of involvement with the educational process or any strong commitment to it.

While some forms of intimacy, one is inclined to believe, should not be denied to students, they should not be given intimate props, intimate and directive guidance. Many students still are hoping for something that they are not getting and perhaps for something that could add true meaning to the educational venture. Again we have no evidence that compares systematically televised instruction and lecture instruction in respect to either personal involvement or personal commitment, but we do have some serious questions concerning the felt impersonalness of education whatever the means of instruction, the felt desire for intimacy, an involvement, a contact, a commitment, that many hundreds of our students mentioned here and would very probably mention, one can believe, in connection with any other kind of college instruction. How might we increase the personalness of education while still facing logistic reality? Can there be mass intimacy? Is there reason to believe that because television can come so close to the instructor and place him so close, so visually close, to the student that the intimate eye-to-eye contact in televised instruction may be greater than that in any other form of mass instruction that is logistically feasible? It may be well to remember that nearly 50 per cent of the students report that they are becoming well acquainted with the televised instructor before the semester was over and that over a third of them felt fairly often that the televised instructor was speaking directly to them. It would be enlightening to have comparable data from the students who sit in lecture courses in which from 100 to 300 are enrolled. It is still in the realm of possibility that TV can compete successfully with other modes of instruction in bringing about a pedagogically desirable teacher-student relationship. Certainly, since TV can so intimately reveal personality, it can convey to the student that the ideas, the content, the facts being promulgated in a course are part of the life of a whole human being.

In ways much more factual than is the case with the above speculative interpolations, the data in Table III.C.7. speak for themselves. There are no actual surprises here in the light of the data we have seen earlier on the responses to direct questions about the advantages and disadvantages of educational television. One might study the responses here, however, with an eye to making feasible improvements in the manner in which televised instruction is presented. In terms of the advantages seen by students, certainly one needs to think about ways in which visual aids and demonstrations, viewed as the prime strength of televised instruction, can be used to their fullest and most pedagogically effective extent. And in connection with the data mentioned on disadvantages, one can think of ways in which televised instruction can be produced so as to reduce as much as possible the impression of impersonality. This dimension of televised instruction really does deserve further exploration. There is evidence here of its importance and there is reason to believe that this kind of dimension of instructor-student relationship can be explored very well indeed through the use of the ITV medium. Certainly there are some television teachers who seem more personally pleasant to the students than do others. There are some techniques used in teaching that bring the teacher with more apparent intimacy to the student. The fact of close-up shots of an instructor's face and the intimate exposure of some of the expressions thereon may increase the feeling of intimacy while distance shots do not. It may be that the use of the more intimate phrasing of content, where "you" and "I" and frequent references to events occurring in the classroom, or to the person who is sitting next to you, and such other devices may increase significantly the feeling that the student is personally and intimately connected with the televised instruction. On educational grounds, one may argue that this kind of personal intimacy can easily be overestimated and overdone. But again, if students want it and respond favorably to it, it seems reasonable that one should adjust in a feasible way the instruction on television so as to bring it about.

Also ranking high among the disadvantages is the observation that TV moves too rapidly so that stuments cannot take notes and cannot keep up. This fact may deserve consideration. Certainly the television instructors universally report that they do cover more material per unit of time over television than they do in class, and that they do tend to hurry along with great efficiency and with a high degree of organization. This kind of speed and hurry and efficiency may really overwork students or may demand more of their attention than can realistically be expected. There is probably an optimal pace, for any given audience, for the presentation of content. Maybe we should think in terms of educational presentation in which there are "note breaks" or occasions to stand up and stretch, or brief interludes in a presentation where very little is going on and where everybody knows that they are free now to relax a bit. This is a technique that perhaps deserves experimentation.

TABLE III C 7

Free Response Data for Questions on Advantages and Disadvantages of Televised Instruction

N = 1829 TEMP Students

Rank	N	
		Advantages Mentioned
1	785	Visual aids good, helpful
2	652	Get better teachers on TV
3	534	Teacher better prepared, better organized
4	356	Saves teacher time, saves money
5	328	Efficient, no time wasted, no interruptions
6	228	More thorough in coverage
7	185	Easier to pay attention
8	114	Easier for students to prepare
9	94	Uniformity; everybody gets same course
	310	Miscellaneous
TOTAL	3586	
		Disadvantages Mentioned
1	790	Can't ask questions in class
2	721	Moves too rapidly; can't keep up
3	505	Too impersonal (general)
4	459	Technical defficulties; picture, sound poor
5	419	Gets Boring, attention drifts
6	297	Test anxiety; can't tell what will be on exams
7	207	Impersonal; teacher can't react to students
8	171	Confusion in third hour; local instructor confuses issues
9	150	Impersonal; student can't react to teacher

TABLE III C 7 (Continued)

Rank	N	
	546	Miscellaneous
TOTAL	4265	

III.C.6. Summary.

At the end of the first full semester of operation of the TEMP network, questionnaire forms, containing forty five attitudinal items on educational TV as well as spaces for the recording of the usual items of face data, were sent via local instructors to all students enrolled in TEMP courses. The instructors were requested to have their students fill out these forms and return them to the TEMP research office at the end of the semester. A total of 1829 usable questionnaires were returned by the 3700 students enrolled in TEMP courses during the semester. There were certain deficiencies of representativeness in the sample of returned questionnaires but none that seem likely to invalidate the treatment of the data. The results from the simple tabulation of total responses to these 45 items may be summarized as follows:

1. In absolute terms it has to be reported that our students showed no great enthusiasm for televised instruction. In general, responses to the clearly evaluative items fall slightly on the negative side of neutral. Of course it seems highly likely that students in responding to any courses they take would fall at least just as far on the negative side of the neutral point on the positive-negative dimension. We cannot actually say that students do not like televised instruction without, in justice, bringing to mind immediately the likelihood that students do not like any classes very much.

2. About half of our responding students report that they would choose televised instruction in preference to large lecture classes if the instructor were the same.

3. Similarly, almost half of our students agree with the proposition that the televised course they have taken is "as good as any course in this subject anywhere."

4. The data reported in the two items above can probably be taken as indication of a relatively favorable student disposition to the televised courses of the TEMP network.

5. Students are not inclined, however, to recommend TV to their friends. A likely interpretation of the apparent discrepancy between responses to such an item and responses to other evaluative items is in terms of a discrepancy between public and private attitudes. For themselves, the students have one reasonably favorable attitude toward television; ~~they are not likely to report to their friends, however, that they like television~~; they are not likely to report to their friends, however, that they like television or to recommend to their friends that television courses be taken. This may be an indication that there are on the various campuses some publicly expressed doubt about television courses and that those students who are taking such courses are likely to go along with the public trend.

6. With respect to what have been termed the "administrative" aspects of televised instruction, a large proportion of our responding students (90%) agree that television allows them to be exposed to the "country's best teachers." A decided majority (71%) of students also agree that the teachers selected to present television courses are likely to be better than teachers who are not selected. There is evidence here, then, that students are relatively willing to accept the idea of "master teachers" and to accept the likelihood that television can bring such teachers to the campus.

7. Our data revealed little or no resentment among our students of "imported" instruction.

8. When asked about some of the technical and procedural advantages of ITV, the majority of students agree that visual aids are good and that the television instructors are likely to be very thoroughly prepared as compared

to other instructors. They do not agree with the statement that televised instruction is good in that it frees them from distraction.

9. Thirty-seven per cent of our respondents agree to some extent with the statement that they have learned more from the televised course than from any other course they have taken so far in college. While we have no clearly comparable data concerning the students' reaction to any of the other courses they have taken, it seems likely that this figure represents a relatively strong student endorsement of televised instruction. Perhaps this datum should be listed among the items above dealing with the positive-negative dimension of reaction to ITV.

10. Among the items concerning the disadvantages of TV, the students give the greatest weight to the item "a disadvantage of TV is that there is no personal contact with the teacher who is to give the exam." Since this item taps the matter of "personalness" of the instruction, to be dealt with later, and also the matter of anxiety about who is making up and administering tests, one would expect a large percentage of our students to agree with this negative statement. They do. These are matters to be re-examined a bit later.

11. A large percentage of our students—approximately 45%—agree that television instruction is likely to be "humorless" instruction. They do not give frequent assent to our statement concerning increased difficulty in taking notes in TV courses. Nor do they agree that the local TV monitor dislikes televised instruction.

12. With respect to the perceived difficulty of the television courses the general response indicates that the courses were relatively difficult. Fifty-six per cent of our students report that the course they were taking was "as difficult as any I have had." There is no clear indication as to

the elements contributing to this perceived difficulty, though it is likely that the relatively rapid pacing of substantive material may contribute to the perceived difficulty of the course.

13. The responses to items dealing with personal relations between students and teachers present some strange and puzzling data. A large proportion of our students (81%) agree with the statement "although there may be some advantages to televised instruction, there can be nothing better than personal contact with the classroom teacher." Such a datum indicates clearly the student's verbalized and perhaps idealized feeling for the personal contact with the classroom teacher.

14. Also in the area of personalness of instruction, 70% of our respondents agree to some extent with the statement that "in most of my classes I often ask questions of the teacher." One may doubt that such a report has much in common with actual behavior. But again the datum can be taken as indication of the felt importance for students of a dimension of personalness. With respect to personalness, one is lead by the examination of our data and the context in which they fall to the conclusion that students are comparing television to an idealized "Mark Hopkins" teacher-student relationship, that they are articulating some kind of myth and that their image of the ideal classroom situation is the reciprocal of the image held by many of the instructors themselves (see III.   ).

15. Though the data concerning personalness indicate the importance of this kind of variable in determining the students' attitude toward televised or any other kind of instruction, there are no data here or anywhere else that bear on the effect of such personalness on the student's educational growth.

16. Although students see the absence of personalness as a disadvantage of educational television, a relatively large number of them still see

elements of personalness in the televised course they have had. For example, approximately half of the students here report that they felt they were getting pretty well acquainted with the television instructor. Over a third of them agree that they often felt that the "television instructor was talking directly to me." These data seem to indicate that the personalness of televised instruction, in actuality, is as great as the personalness in large lecture courses.

17. When given a free response question about the advantages and disadvantages of TV, our students list 4265 disadvantages and 3586 advantages. One appropriately wonders, in the face of these data, if the perceived disadvantages of any mode of college instruction will similarly outweigh its advantages. And there may well need to be some productive puzzling over ways to make the processes of education more pleasant as well as more educative.

18. The most frequently mentioned disadvantage is the inability to ask questions in class. This datum may perhaps be interpreted as part of the general desire on the part of the student for more "personalness" in the whole process of education.

19. The question of desirable amount and kind of intimacy and personalness in educative processes remains a subtle and difficult one--and one of potentially enormous significance for higher education.

20. The data on perceived disadvantages suggest the desirability of exploring ways in which TV instructors can move toward meeting the students' felt need for intimacy and personalness.

21. The data on perceived disadvantages point up also the need to explore the problem of optimal "pacing" of televised instruction. It seems likely

that many ITV presentations move at more than the optimal rate; that is, they present more substantive units per unit of time than students can properly deal with.

III.D. ANALYSIS OF INTERCORRELATIONS AMONG ITEMS ON TEMP STUDENT ASSESSMENT FORM

In addition to the foregoing analyses of the responses of our total sample of students, the data from the returned assessment forms were so programmed for an electronic computer that it was possible to examine, in terms of point biserial correlations coefficients, the relationship between any variable and any other of the variables appearing on the questionnaire.*

Through a process of treating each of the face data variables as a dichotomous variable, it was possible also to examine relationships between these variables (age, sex, etc.) and attitudinal variables occurring later in the assessment form.

Of the 1845 assessment forms returned, only 1245 were complete in every respect and hence usable in the computer analysis. As far as could be determined by inspection of the data, the elimination of 600 individuals from our sample did not affect the sample in any significant respect other than size. Most of the eliminations for incompleteness seemed to be due to the fact that some student accidentally had failed to answer one question or had given two answers to another question where they should have been only one, and so forth. Such accidents did not seem to be concentrated in any one population category: such accidents did not seem to occur more in one institution than at another or more in one course than in another, or more to members of one sex group than to members of another. Within the limits noted earlier (p) it seems fairly safe that we can talk about our total population of TEMP students on the basis of our sample of 1245 of them.

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*A debt of gratitude is owed to Dr. Wayne Herron, who supervised the programming of these data for the electronic computer, and to the Hogg Foundation of Mental Health, who made Dr. Herron available for this function and who furnished other facilitation for the computation process.

III.D.1. Intercorrelations among Items on Evaluation of TV Instruction

Since a major purpose of analyzing the interrelationships among the student responses to many aspects of TV instruction is that of determining what factors relate closely with their acceptance or rejection of such instruction, it seems desirable, first off, to look at the interrelationship among the items that asked for a clear expression, on a positive-negative dimension, of student reaction to either the specific televised course being taken or to ITV in general. The data on these items are presented in Table III.D.1. It seems clear that there are consistent tendencies for students to express similar attitudes, on different occasions throughout the questionnaire, to televised instruction. The point biserial correlations among the responses to Items 1, 4, 9, 20 and 27 are relatively high. The average intercorrelation here is .723, a figure indicating that for many purposes we could treat these five items as separate items on a scale or we could take any one of them as a reasonably safe indication of the likely positive or negative orientation of our respondents.

Many educators, particularly the more optimistic ones, would think that a course which students judge to be a good course will also be a course they like. The data in Table III.D.1. do not indicate this to be the case. The fact is that responses to the item (No. 11), saying "This television course is probably as good as any course in this subject taught anywhere in the country" does not correlate nearly as much with the pro and con items as any one of the pro and con items correlates with another pro and con item. The average correlation of answers to this question with answers to the more positive-negative questions is only .374, as compared to the average correlation of .723 among the more openly attitudinal items. These figures mean that it is obviously possible for students to recognize that a course is

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TABLE III.D.1.

INTERCORRELATIONS, ITEMS ON EVALUATION OF TV INSTRUCTION

#	Items	1	8	9	11	20	23
1.	Given a choice between taking the same course from the same instructor on TV or in a large lecture class, I'd choose the TV.	1.00	.67	.74	.30	-.64	-.68
8.	Although some students may dislike TV instruction, I myself think it a fine idea.	.67	1.00	.74	.41	-.81	-.74
9.	If a friend of mine had a choice of taking this course either over TV or in a large lecture section, I'd recommend that he take it over TV.	.74	.74	1.00	.38	-.70	-.76
11.	This televised course is probably as good as any course in this subject taught anywhere in the country.	.30	.40	.38	1.00	-.40	-.39
20.	TV instruction might be good for some students but as for me, I am strongly opposed to it.	-.64	-.81	-.70	-.40	1.00	.75
23.	If a friend of mine had a choice of taking this course over TV or in a lecture section, I'd recommend that he take the lecture section.	-.68	-.74	-.76	-.38	.75	1.00

All figures represent point biserial correlations coefficients. All r's are statistically significant above .001 level.

III.D.2. Sex Differences in Student Attitudes Toward TV Instruction.

There is abundant evidence in the literature that male and female students do differ in many ways in their orientation to and behavior in college classes. Our present data, however, based on responses from 631 male students and 614 female students, show there to be remarkably few significant differences between the two sexes in responses to televised instruction. Table III.D.2. presents the only 5 of our 45 attitudinal items in which there were appreciable differences between the answers given by male and by female students. Not much can be made of these data except perhaps to observe that girls seem to take a somewhat gentler stance toward this kind of instruction. Fewer of them observe that television represents an attempt to save money on teaching staff, somewhat more of them are convinced of the generally high quality of the TV course, and somewhat more may demonstrate a female preference for the personal by saying that they need a teacher who is present in order to respect him and that they regard televised instruction as humorless instruction. But not much can be made of any of these data.

2-1

TABLE III.D.2.

SEX DIFFERENCES IN STUDENT ATTITUDES TOWARD TV INSTRUCTION

The following table contains all point biserial correlations greater than .10 between sex and attitudinal items [redacted] N = 1245; 631 boys, 614 girls. Negative correlations mean a disproportionately small number of girls answer the items.

		Biserial r with sex
6.	TV instruction represents an attempt to save money on teaching staff.	-.15
11.	This televised course is probably as good as any course in this subject taught anywhere in the country.	.10
15.	I find that I cannot truly respect a teacher unless he is there in class in person.	.12
19.	The local teacher who sits in on the television course obviously dislikes it.	.11
32.	Televised instruction is likely to be humorless instruction.	.13

All r's are significant at > .01.

III.D.3. Institutional Differences in Students' Attitudinal Responses to Instructional TV.

Table III.D.3. presents data bearing on differences among the various institutions with respect to students' answers to number of items bearing on the positive-negative evaluation of televised instruction.

The outstanding thing about these data is the fact that there are relatively few significant differences with respect to the institutional identification of students. It does not seem desirable here to identify the particular institutions, except to say that Institution No. 1 was the large state university involved in the project, and that the other ten institutions were the assorted smaller institutions of the central Texas area. None of the smaller institutions, with the possible exception of one, seems to differ significantly from the orientation of the students at the large state university. Nor do they differ one from another. Students in Institution No. 10 somehow do react negatively to all our items, and their reactions show a statistically significant relationship to six of the items dealt with in Table III.D.3. There are no clues in our data as to why this spot of negativism exists. It does not seem to be due to the fact that the faculty members at that particular institution are negative to the TEMP operation; for the students at Institution No. 10 do not think that their teachers are particularly negative. (See answers to Item 19).

The presence of so few differences in Table III.D.3. may be taken as encouragement to those who are interested in advancing inter-institutional television. Students do not easily, our data show, come down with the kind of institutional loyalties that will turn them negative to "imported" courses from other institutions.

TABLE IIID.3.

Students Responses, by Institution, to Evaluative Items

Item	Institution 1	2	3	4	5	6	7	8	9	10	11
1. Given a choice between taking the same course from the same instructor on TV or in a large lecture class, I'd choose the TV.	.03	.03	.00	.00	.01	-.02	.05	-.02	.02	-.11	.05
8. Although some students may dislike TV instruction, I myself think it a fine idea.	.04	.07	.00	-.01	.01	.00	.05	-.02	.01	-.12	-.03
9. If a friend of mine had a choice of taking this course either over TV or in a large lecture section, I'd recommend that he take it over TV.	.03	-.03	-.02	.00	.03	.01	.07	.02	-.04	-.16	.02
11. This televised course is probably as good as any course in this subject taught anywhere in the country.	.11	-.01	-.06	.12	-.06	.01	-.04	-.04	.09	-.17	.02
19. The local teacher who sits in on the television course obviously dislikes it.	-.02	.04	.08	-.02	.01	0.04	.05	.02	-.19	.08	.04
23. If a friend of mine had a choice of taking this course over TV or in a lecture section, I'd recommend that he take the lecture section.	.00	-.07	.01	.00	.01	.00	-.08	.01	.01	.12	.01
30. I feel that I have learned more from this televised course than from many courses I've had in college.	-.02	.02	-.06	-.01	-.01	.02	.12	.03	.03	-.13	.00

Magnitude of r's in the table is proportional to the relative number of students agreeing with the item. If 100 students agree and 100 disagree at any one institution on any one item, for example, the r will be .00. r's significant > .05 are underscored in the table.

The matter of institutional identification or institutional loyalty as these may affect the student's attitude toward the televised courses they are taking can be further examined by looking at the student responses at those items in the questionnaire that deal directly with the question of "imported" courses and related matters. These data are presented in Table III.D.3-1. Here again we see a relative absence of any kind of inter-institutional "jealousy" or any kind of resistance on the part of receiving institutions to material sent out from sending institutions. Again students from institution No. 10 seem inclined to encapsulate themselves from "imported" influences, but even here the data are not overpoweringly convincing. At Institution No. 10 the students do agree that it is not a good thing for the institution "to import instructors" and do not agree that "the use of televised instruction can make an improvement in its own level of instruction". In only one other of the eleven institutions, No. 7, is there a similar kind of evidence of resistance to importations, and here also there is no evidence of any stringent kind of resistance or of encapsulation. In this table as in the foregoing one, the important thing seems to be the absence of relationships between institutional identification and their attitudes toward the particular courses involved in this project. For individual students, at whatever institution they are found, there can still be a relation between their judgments of the quality of local instruction and their attitudes toward this "imported" instruction. This is a matter we will examine later.

TABLE III D 3.1

STUDENT ATTITUDES AT 11 INSTITUTIONS ON ITEMS
INVOLVING ACTUAL OR IMPLIED COMPARISONS OF INSTITUTIONS

Item	Institution 1	2	3	4	5	6	7	8	9	10	11
31. It is not a good thing for this institution to try to "import" instructors via television to teach its courses.	-.02	-.05	.00	.02	.07	.00	.12	-.03	.03	.12	.05
37. Through the use of television it is possible for students anywhere to be exposed to the country's best teachers.	.07	-.03	-.09	.05	-.03	.02	.03	-.01	.03	-.09	.00
40. This institution certainly has no need to "import" teachers from other schools	.05	-.07	.05	.11	.05	-.04	-.19	.03	.02	.04	-.01
42. I think that the use of television instruction can make a significant improvement in instruction on this campus.	.04	.08	-.07	-.03	-.04	-.00	.11	.00	-.01	-.10	.00

r's are proportional to relative number of students who agree with the given items. Negative r's refer similarly to disagreement.
Any r of .62 has p ≤ .05
Any r of .81 has p < .01
Any r of .104 has p < .001

III.D.4. Student Reaction to Eight Individual Courses on TEMP Network.*

It is a reasonable hypothesis that students' over-all reaction to educational television will vary with the particular exposure to the televised course they have had. While a number of our students had taken more than one TV course, we might expect that the generalization to ITV would be at least partly conditioned by their exposure to the particular course upon which they reported here. Data in III.D.4. bear on this question. Here we examine items 1, 8, 11, 20, and 23--the items clearly having to do with attitudinal evaluation of the courses--as the responses to these items vary with each of the eight courses taken.

There are no pronounced variations in student evaluations from one course to another. Course No. 1 tends in general to be a somewhat more positively evaluated course than Course No. 2, but there seems to be no real differences among the other courses. And, of course, there is no easy and direct way to interpret the data on the evaluation of these particular courses. There are a number of factors that vary in addition to the fact that the presentation was televised. A televised course on one campus is monitored and supplemented by an individual who approves of it, or by a group of graduate students who are not particularly gifted at teaching, or is combined with a textbook which is very confusing rather than facilitating. All these factors add up to the general reaction to the course and they all will have an influence on the reaction to educational television as exemplified by that course.

*The eight courses being offered at the time were German, Chemistry, Psychology, American History, Music Appreciation, Algebra, Science for Elementary Teachers and The Great Plains. This is not the order in which the courses are listed in the tables in this section.

TABLE III D.4.

Students' Attitudes Related to Course Taken

	r with evaluative items				
Course	#1	#8	#11	#20	#23
1	.08	.10	.01	-.11	.09
2	-.09	-.10	-.01	.11	.11
3	.00	-.02	.01	.07	.02
4	-.05	-.05	.09	.06	.04
5	.01	.02	.03	-.01	-.02
6	.01	.02	-.02	-.03	.02
7	-.10	-.08	.00	.06	.08
8	.09	.05	-.05	-.08	-.09

All r's are point biserial correlations.
Any r of .062 has $p \leq .05$
Any r of .081 has $p \leq .01$
Any r of .104 has $p \leq .001$

Items:

1. Given a choice between taking the same course from the same instructor on TV or in a large lecture class, I'd choose the TV.

8. Although some students may dislike TV instruction, I myself think it a fine idea.

11. This televised course is probably as good as any course in this subject taught anywhere in the country.

20. TV instruction might be good for some students but as for me, I am strongly opposed to it.

23. If a friend of mine had a choice of taking this course over TV or in a lecture section, I'd recommend that he take the lecture section.

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III.D.5. Perceived Differences Among TEMP Courses.

Bearing on the same general area of concern, the data in Table III.D.5. present the responses to items bearing on the perceived ease or difficulty of the eight TEMP courses. Here again our data are difficult to interpret, but within the limits imposed by the pecularity of our sample and the smallness of the correlations, it seems that course No. 6 is judged the most difficult course of all, with course No. 2 running in second place. It is a reasonable hypothesis that the perceived ease of course No. 1 when compared with the perceived difficulty of course No. 2 has a bearing on the relatively favorable rating of course No. 1 and the unfavorable rating of No. 2, in the earlier table (III.D.4).

The data on reactions to the personalness of ITV also have a bearing not only on student acceptance of educational television in general but on their positive or negative reactions to the particular courses they experienced. It is almost inconceivable that the instructors of these eight courses, however carefully chosen they may have been, did not differ in their capacity at least to appear personally concerned with students even though they were teaching on television. Some instructors are relatively cold and unresponsive people, others give the appearance of warmth and openness and seem to take delight not only in the process of teaching but in the opportunity to establish even this strange kind of contact with students. Other things being equal, one would expect students to see one kind of personality more than another as a satisfying one with which to establish even the attenuated kind of relationship that may maintain in a television course. The data in Table III.D.5. do show that the eight courses tend to differ with respect to the "personal" dimension. Again courses 1 and 2 stand out. Course 1 is perceived as relatively personal, course 2 relatively impersonal. Among the other six courses there appear to be very few differences on this variable. But on course No. 1, students in our sample do tend, to a statistically significant degree, to regard course 1 as relatively devoid of humorlessness and to have an instructor with whom they thought themselves to be getting acquainted. They tended not to regard their instructor as a complete stranger. In course 2, by contrast, they did not feel themselves to be getting acquainted with the instructor as the semester wore on, they did regard televised instruction as "humorless instruction," and they did tend, by comparison, to feel more strongly that the instructor was a total stranger to them.

Again, we need to be cautious in interpreting these data. It is obvious that courses can differ with respect to the variable of personalness. But what might account for the differences? If one of the two courses concerning us primarily above was a course in the nature of communism, for example, one would expect that a number of our institutions would reject anything connected with that course more so than would some other institutions that might be able to approach this topic more objectively. If the content of the course has some kind of disturbing influence on the students, they are going to back off of it, to downgrade it, to "bad mouth" it at any opportunity. Involved also may be selective factors. Those students who come into a televised course in a "hard-nosed" physical science are not likely to expect personalness or warmth or humor. Or perhaps they are less likely to expect such things here than in a course in English literature or history or music appreciation or psychology. If they do find warmth and humanness in a course in math or physical science, their response to it is likely to be much greater, like a response to a small joke in church. In other courses, any absence of personalness or warmth or humanity or humor might be more perceptually pronounced in one course than in another. Until we can analyse present data more thoroughly and get more data that are relevant to such questions, we cannot do much to explain the differences in reactions that seemingly relate to the particular courses. It needs to be repeated that our present figures demonstrate most clearly that siseable differences with respect to such a matter of "personalness" can occur from one course to another. But as pronounced as this finding is, the general conclusion,still holds that none of the differences among the courses, in the eyes of students, is very great. But as is the case in other contexts, we need to remember that students may lbe judging the TV course they are taking against an "idea" or imagined course, the likes of which they may never encounter.

TABLE III D.5.

Perceived Difficulty of Various TV Courses

Course	Items on Ease or Difficulty #10	#18	#36
1	.00	.11	-.13
2	-.02	-.09	.12
3	.07	-.10	.12
4	.06	-.05	.05
5	.02	.12	-.10
6	.01	-.19	.14
7	-.04	-.07	.08
8	-.08	.16	-.15

r's ~~as~~ are point biserial correaltions.
Any $r < .062$ has $p \leq .05$
Any $r < .081$ has $p \leq 01$
Any $r < .104$ has $p \leq .001$

Items:

10: Seriously interested students will probably learn more from a televised course than from a lecture course.

18: I found this televised course easier than most college courses I've had.

36: This televised course was as difficult as any I've ever had.

TABLE III D.5.

Perceived Difficulty of Various TV Courses

	Items on Ease or Difficulty		
Course	#10	#18	#36
1	.00	.11	-.13
2	-.02	-.09	.12
3	.07	-.10	.12
4	.06	-.05	.05
5	.02	.12	-.10
6	.01	-.19	.14
7	-.04	-.07	.08
8	-.08	.16	-.15

r's ~~be~~ are point biderial correaltions.
Any $r < .062$ has $p \leq .05$
Any $r < .081$ has $p \leq 01$
Any $r < .104$ has $p \leq .001$

Items:

10: Seriously interested students will probably learn more from a televised course than from a lecture course.

18: I found this televised course easier than most college courses I've had.

36: This televised course was as difficult as any I've ever had.

TABLE IIID.5-1.

Perceived "Personalness" of Various Courses

Course	Various "Personalness" Items #21	#28	#32	#33	#44
1	.00	.08	-.17	-.13	.04
2	.01	-.12	.19	.13	-.08
3	.01	-.05	.08	.03	.02
4	-.05	.07	.02	.01	.07
5	-.02	.00	.02	.05	.01
6	-.02	.01	.06	.03	.03
7	.02	-.05	-.03	.01	.07
8	.04	.00	-.09	.01	-.02

All r's are point biserial correlations
Any r of .062 has $p \leq .05$
Any r of .081 has $p \leq .01$
Any r of .104 has $p \leq .001$

Items:
21. The impersonalness of television instruction makes me dislike it.
28. During the semester I felt that I was getting pretty well acquainted with the instructor on television.
32. Televised instruction is likely to be humorless instruction.
33. I feel that the television instructor is a complete stranger to me.
44. I often felt that the television instructor was talking directly to me.

III.D.6. Academic Year and Chronological Age Related to Student Evaluation of Educational TV.

One might make a case, from the armchair, that younger students—academically younger students—would be particularly negative to televised instruction because they would feel more strongly the need for the personal and avuncular touch in class. As a matter of fact, according to our data, what tendency there is for attitudinal variation with age runs the other way. Our academically older students—the juniors and seniors—tend to be somewhat more negative toward televised instruction than do the freshmen and sophomores. Data bearing on this matter are presented in Table III.D.6. Juniors and seniors are not significantly different from freshmen and sophomores in the frequency with which they say they "learned more from this course than from any other" but on other items they do lean toward a less favorable stance. They are significantly different from freshmen and sophomores in judging televised instruction to be humorless instruction. Other than on these general evaluative items, however, there are relatively few differences between lower classmen and upper classmen in their reaction to the many aspects of televised instruction.

The relations that hold for academic age also hold, generally, for chronological age. These data are so similar that they are not presented here. The older people seem a little less favorably inclined than do the younger ones toward educational television. But again, generally speaking, chronological age, as is the case of academic age, relates significantly with very few of our attitudinal items.

TABLE III.D.6.

ACADEMIC YEAR AND STUDENT EVALUATION OF EDUCATIONAL TELEVISION

	Evaluative Item	r with academic year
1.	Given a choice between taking the same course from the same instructor on TV or in a large lecture class, I'd choose the TV.	-.21
8.	Although some students may dislike TV instruction, I myself think it a fine idea.	-.08
9.	If a friend of mine had a choice of taking this course either over TV or in a large lecture section, I'd recommend that he take it over TV.	-.08
20.	TV instruction might be good for some students but as for me, I am strongly opposed to it.	.12
23.	If a friend of mine had a choice of taking this course over TV or in a lecture section, I'd recommend that he take the lecture section.	.08
30.	I feel that I have learned more from this televised course than from many courses I've had in college.	-.04
32.	Televised instruction is likely to be humorless instruction.	.16

All r's are point biserial correlations
Any r of .062 has $p \leq .05$
Any r of .081 has $p \leq .01$
Any r of .104 has $p \leq .001$

TABLE III.D.6.

ACADEMIC YEAR AND STUDENT EVALUATION OF EDUCATIONAL TELEVISION

Evaluative Item	r with academic year
1. Given a choice between taking the same course from the same instructor on TV or in a large lecture class, I'd choose the TV.	-.21
6. Although some students may dislike TV instruction, I myself think it a fine idea.	-.08
9. If a friend of mine had a choice of taking this course either over TV or in a large lecture section, I'd recommend that he take it over TV.	-.08
20. TV instruction might be good for some students but as for me, I am strongly opposed to it.	.12
23. If a friend of mine had a choice of taking this course over TV or in a lecture section, I'd recommend that he take the lecture section.	.08
30. I feel that I have learned more from this televised course than from many courses I've had in college.	-.04
32. Televised instruction is likely to be humorless instruction.	.16

All r's are point biserial correlations
Any r of .062 has $p \leq .05$
Any r of .081 has $p \leq .01$
Any r of .104 has $p \geq .001$

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III.D.7. Grade Point Average and Attitudes Toward Instructional TV.

Table III.D.7. presents data on the relationship between the students' reported grade point average for all courses in college and ~~his~~ their attitudes toward instructional TV. Perhaps the most marked fact about this table is that on only 13 of the 25 attitudinal items is there a statistically significant relationship between grade point average and attitudes toward educational TV. There seems to be a general if not very marked trend for students with lower grades to demonstrate a little more anxiety about the absence of the teacher, a little more need to have a teacher personally present and a little more emphasis on the difficulty of the televised course. Students who report a higher grade point average are generally a little less frightened of educational TV and a little more positive about its advantage. But none of the differences—here reported in terms of correlations—are either very large or psychologically very significant.

TABLE III.D.7.

COLLEGE GRADE POINT AVERAGE AND ATTITUDES TOWARD ITV

Positive r means how grades agree

26 from the same instructor on TV or in a large lecture class, I'd choose the TV. — .02 HA A SA SD D H

27 2. Instruction by TV is especially bad because students should have personal contact with the teacher who will giving the exam. — .03 HA A SA SD D H

28 3. TV instruction is especially poor in that students should have a teacher in class with them to make them pay attention. — .04 HA A SA SD D HI

74 4. Instruction on TV is likely to be better than live instruction because the serious student has fewer distractions in TV class than in other classes. — .01 HA A SA SD D HI

All r's are point biserial correlations
Any r of .062 has $p \leq .05$
Any r of .081 has $p \leq .01$
Any r of .104 has $p \leq .001$

Typed -
Cut out
Table the items
Marks in blue color

30 5. TV instruction is likely to be poor because the TV instructor can't know anything about the personal problems of his students

.02
HA A SA SD D HD

31 6. TV instuction represents an attempt to save money on teaching staff

-.01
HA A SA SD D HD

32 7. TV instruction is objectionable in that the student can't learn much about the personal characteristics of the instructor

.05
HA A SA SD D HD

E 33 8. Although some students may dislike TV instruction, I myself think it a fine idea.

.00
HA A SA SD D HD

E 34 9. If a friend of mine had a choice of taking this course either over TV or in a large lecture section, I'd recommend that he take it over TV

.01
HA A SA SD D HD

E 35 10. Seriously interested students will probably learn more from a televised course than from a lecture course.

.01
HA A SA SD D HD

E 36 11. This televised course is probably as good as any course in this subject taught anywhere in the country.

03
HA A SA SD D HD

37 12. During the semester there were many questions I wanted to ask the television instructor.

02
HA A SA SD D HD

38 13. Material presented in a lecture is easier to remember than material presented on TV

.01
HA A SA SD D HD

39 14. One serious difficulty with televised instruction is that the television teacher does not give hints about what questions will be given on exams.

low grade agree

-.14
HA A SA SD D HD

15. I find that I cannot truly respect a teacher unless he is there in class in person.

low grade agree

-.11
HA A SA SD D HD

41 16. One advantage of television is that it can make points clearer through the use of visual aids and demonstrations.

-.04
HA A SA SD D HD

42 17. I dislike classes in which I can't ask questions of the teacher.

.00
HA A SA SD D HD

[illegible]

43 18. I found this televised course easier than most college courses I've had.

.1
HA A SA SD D HD

44 19 The local teacher who sits in on the television course obviously dislikes it.

.01
HA A SA SD D HD

45 20. TV instruction might be good for some students but as for me, I am strongly opposed to it.

.03
HA A SA SD D HD

46 21. The impersonalness of television instruction makes me dislike it.

.02
HA A SA SD D HD

47 22. A serious difficulty with television instruction is that it does not allow students to take notes.

.01
HA A SA SD D HD

E

48 23 If a friend of mine had a choice of taking this course over TV or in a lecture section, I'd recommend that he take the lecture section.

.00
HA A SA SD D HD

49 24. A serious difficulty with television instruction is that the student cannot learn what the television instructor thinks is important.

[illegible]

-.13
HA A SA SD D HD

50 25. For me, television just naturally seems better for entertainment than for learning.

-.04
HA A SA SD D HD

51 26. -Students who are seriously interested in the subject would probably learn more in a lecture course than from a televised course in the same subject.

.00
HA A SA SD D HD

52 27. Almost any kind of television program sort of hypnotises me so that I can't help paying attention.

-.07
HA A SA SD D HD

53 28. During the semester I felt that I was getting pretty well acquainted with the instructor on television.

.00
HA A SA SD D HD

54 29. In most of my classes I often ask questions of the teacher.

[illegible]

0.08
HA A SA SD D HD

E

55 30. I feel that I have learned more from this televised course than from many courses I've had in college

-.05
HA A SA SD D HD

I

56 31. It is not a good thing for this institution to try to "import" instructors via television to teach its courses.

.0
HA A SA SD D HD

57 32. Televised instruction is likely to be humorless instruction.

.00
HA A SA SD D HD

33. I feel that the television instructor is a complete stranger to me. ! [illegible] +.08
HA A SA SD D HD

59 34. A lecture course is likely to be more difficult than the same course taught by TV. .00
HA A SA SD D HD

35. Presentation of material by a lecturer is likely to be more orderly and thorough than is a televised presentation. -.06
HA A SA SD D HD

D 36. This televised course was as difficult as any I've ever had. low grade agree -.09
HA A SA SD D HD

I 6 37. Through the use of television it is possible for students anywhere to be exposed to the country's best teachers. -.01
HA A SA SD D HD

6 38. Teachers selected to present courses on television are likely to be better than those who are not selected. hi [illegible] grade agree .06
HA A SA SD D HD

64 39. Although there may be some advantages in televised instruction, there can be nothing better than personel contact with a classroom teacher. .05
HA A SA SD D HD

I 65 40. This institution certainly has no need to "import" teachers from other schools. .04
HA A SA SD D HD

66 41. I find it very difficult to pay attention to televised instruction. .01
HA A SA SD D HD

I 67 42. I think that the use of television instruction can make a significant improvement in instruction on this campus. .07
HA A SA SD D HD

43. Television instructors are likely to be more thoroughly prepared than are classroom lectures. hi grade agree .06
HA A SA SD D HD

69 44. I often felt that the television instructor was talking directly to me. .03
HA A SA SD D HD

P 70 45. I find I can't really learn a subject unless I have frequent personal contact with the teacher. low grade agree. -.11
HA A SA SD D HD

III.D.8. Anticipated Grade in Televised Course and Attitudes Toward Televised Course.

We saw above that the students' reported grade point average for all of his courses in college did not seem to have much bearing on his feeling about the particular televised course he was taking or about educational television in general. Things get to be quite a bit more involved, however, when we relate the student's anticipated grade in this particular course to his attitudes toward this particular course and toward the televised instructional procedure. When we make such an analysis, there are significant relationships on 37 of our 45 attitudinal items between reported anticipated grade and attitudes. These data are presented in Table III.D.6.

Not much needs to be said about the data in Table III.D.6. It seems eminently clear that any time that students anticipating grades of A or B have an opportunity to make favorable judgments of televised instruction they do so. Whereas the students anticipating lower grades make less favorable judgments. Of course there remains the key question: Do students anticipate good grades because they are enjoying the course or do they enjoy the course because they are anticipating good grades? Or is it the case that neither of these alternatives is sufficiently complex to be realistic? We have pointed out earlier that there are many reasons for a student to react favorably to a course; it seems reasonable to expect that the anticipation of a good grade in it is one--and only one--of a number of reasons. There are a number of other reasons that could lead to a favorable judgment. And perhaps all positive reasons tend to organize themselves into some kind of pattern and perhaps no student could tell precisely why he is favorably disposed toward a course. One suspects that if he were favorably disposed and if other things were controlled, he would make a better grade than an individual who was opposed to the course. Also the converse is reasonable; it would be difficult for a student to have bad things to say about a course when that course was demonstrating the general good judgment necessary to give him a high grade in it. We are still in a functional circle, where correlational data so often leave us.

TABLE III.D.8.

ANTICIPATED GRADE IN TELEVISED COURSE RELATED TO ATTITUDES TOWARD ITV

	Attitudinal Items	Point biserial r with anticipated grade in this televised course	
x 76	1. Given a choice between taking the same course from the same instructor on TV or in a large lecture class, I'd choose the TV.	.13	HA A SA SD D H
x 77	2. Instruction by TV is especially bad because students should have personal contact with the teacher who will giving the exam.	-.12	HA A SA SD D H
78	3. TV instruction is especially poor in that students should have a teacher in class with them to make them pay attention.	-.1[illegible]	HA A SA SD D HI
x 94	4. Instruction on TV is likely to be better than live instruction because the serious student has fewer distractions in TV class than in other classes.	.11	HA A SA SD D HI

All r's are point biserial correlations
Any r of .062 has p ≤ .05
Any r of .081 has p ≤ .01
Any r of .104 has p ≤ .001

30 5. TV instruction is likely to be poor because the TV instructor can't know anything about the personal problems of his students — -.12 — HA A SA SD D HD

31 6. TV instuction represents an attempt to save money on teaching staff — -.02 — HA A SA SD D HD

32 7. TV instruction is objectionable in that the student can't learn much about the personal characteristics of the instructor. — -.07 — HA A SA SD D HD

33 8. Although some students may dislike TV instruction, I myself think it a fine idea. — .23 — HA A SA SD D HD

34 9. If a friend of mine had a choice of taking this course either over TV or in a large lecture section, I'd recommend that he take it over TV — .21 — HA A SA SD D HD

35 10. Seriously interested students will probably learn more from a televised course than from a lecture course. — .12 — HA A SA SD D HD

36 11. This televised course is probably as good as any course in this subject taught anywhere in the country. — .02 — HA A SA SD D HD

37 12. During the semester there were many questions I wanted to ask the television instructor. — -.17 — HA A SA SD D HD

38 13. Material presented in a lecture is easier to remember than material presented on TV — -.21 — HA A SA SD D HD

39 14. One serious difficulty with televised instruction is that the television teacher does not give hints about what questions will be given on exams. — -.14 — HA A SA SD D HD

40 15. I find that I cannot truly respect a teacher unless he is there in class in person. — -.12 — HA A SA SD D HD

41 16. One advantage of television is that it can make points clearer through the use of visual aids and demonstrations. — .12 — HA A SA SD D HD

42 17. I dislike classes in which I can't ask questions of the teacher. — -.11 — HA A SA SD D HD

2.45

43 18. **I found this televised course easier than most college courses I've had.**
.46
HA A SA SD D HD

44 19 **The local teacher who sits in on the television course obviously dislikes it.**
.00
HA A SA SD D HD

45 20. **TV instruction might be good for some students but as for me, I am strongly opposed to it.**
−.23
HA A SA SD D HD

46 21. **The impersonalness of television instruction makes me dislike it.**
−.64
HA A SA SD D HD

47 22. **A serious difficulty with television instruction is that it does not allow students to take notes.**
−11
HA A SA SD D HD

48 23 **If a friend of mine had a choice of taking this course over TV or in a lecture section, I'd recommend that he take the lecture section.**
−.21
HA A SA SD D HD

49 24. **A serious difficulty with television instruction is that the student cannot learn what the television instructor thinks is important.**
−.21
HA A SA SD D HD

50 25. **For me, television just naturally ~~seems~~ better for entertainment than for learning.**
−.16
HA A SA SD D HD

51 26. **Students who are seriously interested in the subject would probably learn more in a lecture course than from a televised course in the same subject.**
−.12
HA A SA SD D HD

52 27. **Almost any kind of television program sort of hypnotizes me so that I can't help paying attention.**
−.03
HA A SA SD D HD

53 28. **During the semester I felt that I was getting pretty well acquainted with the instructor on television.**
.11
HA A SA SD D HD

54 29. **In most of my classes I often ask questions of the teacher.**
02
HA A SA SD D HD

55 30. **I feel that I have learned more from this televised course than from many courses I've had in college**
.27
HA A SA SD D HD

56 31. **It is not a good thing for this institution to try to "import" instructors via television to teach its courses.**
−.13
HA A SA SD D HD

57 32. **Televised instruction is likely to be humorless instruction.**
−12
HA A SA SD D HD

58 33. I feel that the television instructor is a complete stranger to me. -.12 HA A SA SD D HD

59 34. A lecture course is likely to be more difficult than the same course taught by TV. .13 HA A SA SD D HD

60 35. Presentation of material by a lecturer is likely to be more orderly and thorough than is a televised presentation. -.16 HA A SA SD D HD

61 36. This televised course was as difficult as any I've ever had. -.35 HA A SA SD D HD

62 37. Through the use of television it is possible for students anywhere to be exposed to the country's best teachers. .15 HA A SA SD D HD

63 38. Teachers selected to present courses on television are likely to be better than those who are not selected. .21 HA A SA SD D HD

64 39. Although there may be some advantages in televised instruction, there can be nothing better than personel contact with a classroom teacher. -.14 HA A SA SD D HD

65 40. This institution certainly has no need to "import" teachers from other schools. -.16 HA A SA SD D HD

66 41. I find it very difficult to pay attention to televised instruction. -.16 HA A SA SD D HD

67 42. I think that the use of television instruction can make a significant improvement in instruction on this campus. .16 HA A SA SD D HD

68 43. Television instructors are likely to be more thoroughly prepared than are classroom lectures. .12 HA A SA SD D HD

69 44. I often felt that the television instructor was talking directly to me. .17 HA A SA SD D HD

70 45. I find I can't really learn a subject unless I have frequent personal contact with the teacher. -.16 HA A SA SD D HD

III.D.9. Attitudinal Factors Related to Students' Acceptance and Rejection of Educational Television.

With the exception of the matter of a student's anticipated grade in a particular course he is taking, we have found no variable that relates very significantly with the student's tendency to accept or reject either a particular televised course or the general fact of televised instruction. However, it remains an obvious fact that students, on what appears to be an individual basis, do differ widely in their acceptance or rejection of televised instruction. It seems reasonable, in the light of all the evidence we have seen so far, to expect that there are general and organized personality tendencies in individual students which relate to their positive-negative attitudes toward ITV. It may be that we can get some cues concerning what these personality factors might be from an examination of our present data.

In Table III.D.9. there is a display of the mean correlations between three clearly evaluative items and the responses to all the other 42 attitudinal items on the student questionnaire. The items selected for this analysis were Items 8, 9 and 23. These are items that appear to be very similar in form and that demonstrate good solid intercorrelations with one another (III D1).

Not one of the 42 other items fail to be related significantly to these positive-negative items. The highest correlations between the mean of these items and other items occurred in connection with those additional items on the questionnaire which also fall fairly clearly on a positive-negative dimension of evaluation. For example, there is a mean correlation of .89 with item 1, then the mean correlation of -.75 with item 20. Both 1 and 20 are obviously evaluative items, the answers to which can be scaled on a positive-negative dimension.

One interesting and perhaps significant thing that seems to stand out in the data is the indication that the students who react favorably to educational television are the more serious students. For example, there is a correlation of .48 with item 4, an item stating that television instruction is likely to be better because it eliminates distractions. Relatedly, there is a correlation of .55 with item 10 which says that "seriously interested student will probably learn more from a televised course than from a lecture course". The correlation of .39 with item 11, and item relating to the over-all quality of the course as compared to courses elsewhere in the country, may indicate that there is a relationship between the student's personal reaction to the course and his judgement of its quality. This relationship for students at large is not nearly so high. Similarly, the correlation of .37 between attitude and the positive reaction to visual aids again indicates, perhaps, a functional and meaningful relationship between attitudes toward a course and objective observations concerning it. Then the correlation of .59 between attitudinal acceptance and the feeling that "I have learned more from this televised course than from any courses I have had in college" is again in line with an interpretation emphasizing some kind of realistic seriousness about getting an education.

In line with such an interpretation there is a correlation of .54 between the three evaluative items and the judgement (item 42) that "the use of television can make a significant improvement in instruction on the campus". Related is the correlation of -.35 between the three evaluative items and item 40 "this institution certainly has no need to import teachers from other schools". These correlations seem to indicate a meaningful and statistically significant relationship between personal reactions to the course and reasonably favorable judgments concerning impersonal—or nonpersonal—judgments of the procedure. Somewhat dissonant with such interpretations, however, is the correlation of only .13 with item 38 stating that "teachers selected to present courses on television are likely to be better than those who are not selected." One might expect that the favorable attitude toward the course would also include, as part of a coherent pattern, the judgment that the televised teachers were better. But, as will be seen below, the people who are in favor of television do not seem to be so intimately concerned with the teacher or with the quality of his performance. It is conceivable that they are individuals who are able to respond to ideas per se without responding so much to the individuals who have those ideas or who promulgate them. We need to remember however that we are dealing with correlational data only and that there may be many alternative ways of accounting for the co-variations we have found here. It seems to the present writer that there is a plausibility in the kind of general hypothesis suggested above, but there may be other equally tenable hypothesis. Worth testing, nevertheless, is the hypothesis that the more serious students, the students who resonate to ideas and to the processes of learning somewhat more than they do to the personal relationships with teachers, will in general be more favorably inclined to educational television. It seems to follow, also, that such students will be more favorably inclined to books, to ideas in general and are more likely to show general independence of behavior while engaging in educational processes.

Related to such a hypothesis, but examining it from a different stance, is the matter of personality factors in attitudes toward televised instruction. Of obvious relevance on such a matter are data bearing on the student's feeling for the "personalness" of the relationships with the televised instructors.

First, it may be well to look at the relationship between the evaluative items and those items having to do with the asking of questions in class. There is a correlation of -.37 between the three evaluative items and Item 12, "During the semester there were many questions I wanted to ask the television instructor." There was a correlation of -.45 between evaluative items and Item 17, "I dislike classes in which I can't ask questions of the teacher." There was a correlation of -.23 between the evaluative items and Item 29, "In most of my classes, I often ask questions of the teacher." We have earlier examined the possibility--the likelihood, maybe--that students are not reporting accurately when they answer Item No. 29 above. At least they are not accurately reporting their behavior. They may very well be giving a highly accurate report of their feeling on this as well as on the other items concerning questions in class. There is no doubt that students want the feeling that they can ask questions in class. Perhaps what they actually are wanting is some kind of vaguely defined but still open channel of communication with the teacher. It is possible that they want this open channel not so much for intellectual reasons as for somewhat more personal reasons and perhaps, too, for somewhat less pedagogically admirable reasons. When we combine the correlations between the evaluative items and the items on questions in class with the correlations between the evaluative items and some other items concerning personal relations with the teachers, questions arise bearing on the kind of relationship that students do want and on the meaning of this desired relationship for the orientation to TV. On Item 2 for example there is a correlation of -.40 between evaluation and responses to the item "Instruction by TV is especially bad because students should have personal contact with the teacher who will be giving the exam." And again, on Item 3, there is a correlation of -.23 between the attitudinal items and the statement that "TV instruction is poor in that students should have a teacher in class with them to make them pay attention." If the same students who wish to ask questions in class also wish a teacher there to *make* them pay attention, and wish a teacher there so that they can have personal contact with the eventual judge, then the meaning of the data on the desire to ask questions in class takes on a certain shade of meaning. This shade is given more substance when we add the fact that there is a correlation of -.25 between the evaluative items and Item 15, "I find that I cannot truly respect a teacher unless he is there in class in person." Is there some kind of authoritarian dependency here?

There are additional and abundant evidences that those who like television instruction do not put great emphasis on the personal contact with the teacher. Additional data bearing on this question come from Item 39, where there is a correlation of -.52 between evaluative items and "There can be nothing better than personal contact with the classroom teacher." Similarly the correlation of -.44 between evaluative items and Item 45 "I find I can't really learn a subject unless I have frequent personal contact with the teacher."

Relatedly, there is a correlation of -.33 between evaluative items and the responses to Item 24, "A serious difficulty with television instruction is that the student cannot learn what the television instructor thinks is important." One might make a case that the correlation here is lower than with the more blatantly personal items because of the flavor here of "importance"; perhaps the serious student really needs to know, for purposes of mastering ideas, something about what the teacher thinks is important. Knowing what the teacher thinks is important is quite different from knowing that the teacher thinks I am a good boy or girl.

The students who like television are by no means unresponsive to the personal touch. That they do not feel televised instruction to be impersonal is illustrated by the correlation of -.48 between evaluative items and Item 21. Students who dislike television feel it to be impersonal; but those who like it not so much so. Those who like ITV do not feel themselves to be alienated from the teacher. They do not agree that the "television instructor is a complete stranger to me." The correlation here was -.36 with the evaluative items. Also those who were favorable to the ITV felt (.44) that "the television instructor was talking directly to me." The individual who dislikes television instruction seems to feel alienated by television from some kind of contact with the instructor. It seems a reasonable hypothesis that the two kinds of students, if that phrase may be used, are wanting different kinds of relationships with the instructor. On the basis of our present data, tentative and inconclusive as they are, one can base such hypothesis as the following:

1. The more dependent the student, the more the dislike for televised instruction.
2. The more frightened the student is of coming examinations, the more dislike he will register for televised instruction.
3. The more the student needs daily bits of reinforcement from a teacher, the less he will like instructional television.
4. The more the student wishes to manipulate the instructor to the student's advantage, the less the student will like educational television.

Such hypotheses obviously represent not the only ones that can grow out of presently available data. And in entertaining these, one should not forget that we are dealing here with students enrolled primarily in introductory courses, with students who are young, and with students who eventually, even though our hypothesis concerning the desired relationship with the instructors hold true, may rise to and fully deserve instructional situations in which there can be maturely personal give and take between students and teachers.

In addition to the kind of shaky theorizing set down above, there are some perhaps more earthy data coming out of the kind of analysis represented in Table III.D.9. We remarked earlier that there was a tendency for those who liked television to judge it favorably as a technological innovation and to take relatively favorable "administrative" stands with respect to it. One may go back and look at the same correlations, however, and begin to wonder about the fact that the correlations between attitudes toward the course and judgments of the overall objective quality of a course are not higher than they actually are. We've seen earlier that a vast majority of students agree that the use of visual aids and demonstrations is a valuable thing, but there is a correlation of only .37 between evaluation of TV and responses to the item concerning visual aids. Similarly, though most students agree that television makes it possible for students anywhere to be exposed to the country's best teachers, the correlation between this item and the evaluative items is only .22. Similarly, the correlation is only .13 between the evaluative items and the item that TV teachers "are likely to be better than those who are not selected for TV teaching".) These vast and abstract aspects of televised instruction obviously have no intimate bearing in determining the students' attitude toward his own experience. What makes him like or dislike a course is much closer to home than the nationally recognised quality of his teacher or the general pedagogical potentiality of the medium through which he is learning.

It may be somewhat surprising, also, to notice the relatively small correlation between the evaluative items and Item 19, "The local teacher who sits in on the television course obviously dislikes it." The correlation here was only -.16. Many people would guess, in the absence of actual fact, that the attitude of the local monitor, exposed to the students briefly on the days the televised production is presented and who talks with them during the third hour of the week,would be cardinally significant in determining theirs. The research staff encountered the number of fairly dramatic instances in which the attitude of the monitor seemed to determine the attitude of students. In one such case, for example, a graduate student monitor in one of the courses succeeded in turning his 43 students very drastically against not only the television procedure but also against the subject matter, against the text, and against himself through his relatively immature harping about the inadequacies of the television presentation.

But this did not happen generally. The evidence indicates that the local monitor had relatively little influence, in general, on the feeling of his students for televised instruction.

There may be a surprise in the lack of highly significant relations between the perceived difficulty of the course and attitudes toward it. On Item 34 for instance, there is a correlation of only .15 between evaluation and responses to "a lecture course is likely to be more difficult than the same course taught by TV." There was a correlation of only -.22 between evaluation and the Item 36, "This televised course was as difficult as any I've ever had." The perceived difficulty of the course, then, is not primarily important in determining the students' attitudinal response to it. Related to this point is the correlation of .35 between the evaluative items and Item 18, "I found this television course easier than most college courses I've had." This fact, viewed together with those above, probably has to be taken to mean that students do not use, in connection with college courses, the concepts of "easy" and "difficult" as exact opposites. The types of course can be "easier" if in spite of the fact that it requires me to work pretty hard, I can still master it. Bearing on this kind of interpretation is the fact that the correlation between evaluation and Item 30, "I feel that I've learned more from this televised course than from many courses I've had in college." is .59. One perhaps can be inclined toward the pleasant and optimistic interpretation that the students do not respond to the perceived ease or difficulty of a course so much as they do to the perceived success of the course in helping them learn something.

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TABLE III.D.9.

CORRELATION OF ALL ATTITUDINAL ITEMS WITH THREE POSITIVE-NEGATIVE EVALUATIVE ITEMS

Attitudinal Items	Mean r with items 8, 9, 23
1. Given a choice between taking the same course from the same instructor on TV or in a large lecture class, I'd choose the TV.	.69 ~~HA A SA SD D~~ HD
2. Instruction by TV is especially bad because students should have personal contact with the teacher who will giving the exam.	-.40 HA A SA SD D HD
3. TV instruction is especially poor in that students should have a teacher in class with them to make them pay attention.	-.23 ~~HA A SA SD~~ D-HD
4. Instruction on TV is likely to be better than live instruction because the serious student has fewer distractions in TV class than in other classes.	.48 ~~HA A SA SD D~~ HD

D

PD

All r's are point biserial correlations
Any r of .062 has p ≤ .05
Any r of .081 has p ≤ .01
Any r of .104 has p ≤ .001

1 3
2516 ?

P D 5. TV instruction is likely to be poor because the TV instructor can't know anything about the personal problems of his students
-.27
HA A SA SD D HD

6. TV instuction represents an attempt to save money on teaching staff
-.17
HA ~~A SA SD D HD~~

P 7. TV instruction is objectionable in that the student can't learn much about the personal characteristics of the instructor.
-.17
HA A SA SD D HD

8. Although some students may dislike TV instruction, I myself think it a fine idea.
.71
HA A SA SD D HD

9. If a friend of mine had a choice of taking this course either over TV or in a large lecture section, I'd recommend that he take it over TV
.71
HA A SA SD D HD

10. Seriously interested students will probably learn more from a televised course than from a lecture course.
* .55
HA A SA SD D HD

11. This televised course is probably as good as any course in this subject taught anywhere in the country.
* .39
HA A SA SD D HD

QPQ 12. During the semester there were many questions I wanted to ask the television instructor
* -.37
HA A SA SD D HD

13. Material presented in a lecture is easier to remember than material presented on TV
-.52
HA A SA SD D HD

&NP 14. One serious difficulty with televised instruction is that the television teacher does not give hints about what questions will be given on exams.
* -.07
HA A SA SD D HD

PD 15. I find that I cannot truly respect a teacher unless he is there in class in person.
-.25
HA A SA SD D HD

16. One advantage of television is that it can make points clearer through the use of visual aids and demonstrations.
.37
HA A SA SD D HD

QP Q 17. I dislike classes in which I can't ask questions of the teacher.
-.45
HA A SA SD D HD

Mean 5 with [illegible]
4.
8, 9, 23

18. I found this televised course easier than most college courses I've had.

.35
~~HA A SA SD D~~ HD

/ 19 The local teacher who sits in on the television course obviously dislikes it.

-.16
HA A SA SD D HD

20. TV instruction might be good for some students but as for me, I am strongly opposed to it.

-.75
HA A SA SD D HD

/p 21. The impersonalness of television instruction makes me dislike it.

-.48
HA A SA SD D HD

22. A serious difficulty with television instruction is that it does not allow students to take notes.

-.26
HA A SA SD D HD

23. If a friend of mine had a choice of taking this course over TV or in a lecture section, I'd recommend that he take the lecture section.

-.75 (with Mean 4 8 & 9)
HA A SA SD D HD

Ex P 24. A serious difficulty with television instruction is that the student cannot learn what the television instructor thinks is important.

-.33
HA A SA SD D HD

25. For me, television just naturally seems better for entertainment than for learning.

-.45
HA A SA SD D HD

26. Students who are seriously interested in the subject would probably learn more in a lecture course than from a televised course in the same subject.

-.52
HA A SA SD D HD

27. Almost any kind of television program sort of hypnotizes me so that I can't help paying attention.

.04
HA A SA SD D HD

P 28. During the semester I felt that I was getting pretty well acquainted with the instructor on television.

.39
HA A SA SD D HD

p P 29. In most of my classes I often ask questions of the teacher.

-.23
HA A SA SD D HD

30. I feel that I have learned more from this televised course than from many courses I've had in college

.59
HA A SA SD D HD

31. It is not a good thing for this institution to try to "import" instructors via television to teach its courses.

-.52
HA A SA SD D HD

/ 32. Televised instruction is likely to be humorless instruction.

-.28
HA A SA SD D HD

Mean [illegible]

5, 9, 23

P 33. I feel that the television instructor is a complete stranger to me. -.36
~~HA A SA~~ SD D HD

34. A lecture course is likely to be more difficult than the same course taught by TV. .15
HA A SA SD D HD

35. Presentation of material by a lecturer is likely to be more orderly and thorough than is a televised presentation. -.35
HA A SA SD D HD

36. This televised course was as difficult as any I've ever had. -.22
HA A SA SD D HD

37. Through the use of television it is possible for students anywhere to be exposed to the country's best teachers. .22
HA A SA SD D HD

38. Teachers selected to present courses on television are likely to be better than those who are not selected. .13
HA A SA SD D HD

P 39. Although there may be some advantages in televised instruction, there can be nothing better than personal contact with a classroom teacher. -.52
HA A SA SD D HD

40. This institution certainly has no need to "import" teachers from other schools. -.35
HA A SA SD D HD

-P 41. I find it very difficult to pay attention to televised instruction. -.46
HA A SA SD D HD

42. I think that the use of television instruction can make a significant improvement in instruction on this campus. .54
HA A SA SD D HD

43. Television instructors are likely to be more thoroughly prepared than are classroom lectures. .26
HA A SA SD D HD

P 44. I often felt that the television instructor was talking directly to me. .44
HA A SA SD D HD

PD 45. I find I can't really learn a subject unless I have frequent personal contact with the teacher. -.44
HA A SA SD D HD

III.D.10. Summary.

Through the use of programmed computer techniques involving point biserial correlation coefficients, it was possible to examine the relationship between each variable on our questionnaire and each other variable. A total of 1245 returned questionnaires were sufficiently complete to be suitable for use in this kind of intercorrelational analysis.

The data from this analysis may be summarized as follows:

1. There is an average intercorrelation of .72 among the five items on the questionnaire asking the students to make an evaluation, along a positive-negative dimension, of television instruction. Correlations of such a magnitude mean that the total score on the five items can be used as an indication of a given student's general attitude toward television, or that the mean score of a certain group of students on these five items can meaningfully be used as a general indication of attitudes of the group.

2. These five attitudinal items correlate well one with another, but not nearly so highly with an item that many educators would hope to be involved in the student's evaluation of a course. This item: "This television course is probably as good as any course in this subject taught anywhere in the country." correlates only .37, on the average, with the more clearly positive-negative items. Such a comparison means that students can like a course without regarding it as a particularly good course or that they can regard it as a good one but still not like it.

3. In spite of normal expectations that men and women differ in their orientation to college courses, our present data reveal few if any significant differences between our 631 male students and our 614 female students in their response to televised instruction.

4. Our data show very few attitudinal differences between students at one institution and students at another. There are very few differences between student reaction at the large state institution and at all or any one of the smaller institutions, with the possible exception of one of the small institutions. In this one, students react more negatively to all of our evaluative items than do students at any of the other institutions in the project. There are no clues in our data bearing on the causes of this spot of negativism. There seems to be a fairly clear indication in these data, in general, that students do not easily come down with institutional loyalty in relating to televised instruction. They are not inclined in general to reject a course simply because it is "imported".

5. There are no pronounced variations from course to course in student evaluations of instructional television. One of the eight courses reported upon seems a little more favorably received than most, and one seems a little less favorably received than most. But generally the differences are small.

6. There were perceived differences of various kinds among the eight courses in the TEMP project at the time the research was conducted. The differences, however, were not of great magnitude and the ones that do actually appear in the data are difficult to interpret. The courses do differ in perceived difficulty, in perceived personalness, and in perceived humorlessness. Generally the judgment of the courses with respect to these facets thereof relate to the judgment of the over-all quality of the course. But again, caution is needed in interpreting the data.

7. With respect to neither academic year nor chronological age are there noteworthy differences in general reactions to instructional TV. There are some indications that those who are more academically advanced are slightly

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more negative toward ITV and are slightly more inclined to regard it as "humorless".

8. Students who report a high over-all grade point average are slightly more positive in their attitudes toward ITV than are students with comparatively lower grade point averages. These differences are relatively small and generally possess neither psychological nor statistical significance.

9. When we come to the anticipated grade in the particular televised course being taken, however, matters change. There is a very marked tendency for those students who anticipate grades of A or B in the course they are taking to have more favorable attitudes toward televised instruction than do those students who are anticipating grades of C or D. It is not possible to say from our data whether our students anticipate good grades because they like the course or whether they like the course because they are anticipating good grades.

10. In general terms, the data relating answers on clearly evaluative items to responses to other items in the questionnaire show that attitudes toward television are related to a number of personal attributes of individual students. For example, there seems to be good reason to believe that the more serious students are more favorably inclined toward television.

11. Our data make it reasonable to entertain the hypotheses that students who are favorably inclined to educational television will also be more favorably inclined to books, to ideas in general, to any source of stimulation outside of themselves, and perhaps less inclined to evaluate ideas on the basis of the individual who has them or expresses them.

12. Positive attitudes toward educational television are related meaningfully to items bearing on the perceived personalness or impersonalness of the

television procedure. There is good evidence that those who like instructional television do not put great emphasis on the personal contact with the teacher. There are suggestions in the data that for a number of students the emphasis on personal contact with the teacher is some kind of dependency, of dubious pedagogical virtue.

13. Students who like instructional television do not report themselves as feeling alienated from the television teacher. They tend not to agree that the "television instructor is a complete stranger". They are inclined to agree with the statement that "the television instructor was talking directly to me". A number of hypotheses stem from an analysis of the relation between attitudes toward ITV and attitudes toward the expressed desires for certain kinds of relationships with instructors.

14. There tend to be correlations of only small magnitude between positive attitudes toward TV and positive responses to the alleged advantages of TV, such as the quality of visual aids, the thoroughness of coverage, the teacher's adequacy of preparation, the likelihood that TV teachers are better than those who are not selected for TV teaching. These data make it appear that the student's own attitude toward a particular course is very much his own and is not likely to be influenced, in its positive or negative aspect, by abstract or administrative considerations.

15. There is a very small correlation (-.16) between responses on the evaluative items and the feeling that "the local teacher who sits in on the television course obviously dislikes it". It would seem that the attitude toward television of the local monitor is not a significantly determining factorsof the students' attitude.

16. There are correlations of only small magnitude in evaluations of the television course and the judgments of the difficulty of the course.

III.E.4. Student Rating of Teacher Characteristics.

Of some relevance for the discussion of the student personality variables as they may effect the student's orientation to televised instruction are some data, more or less incidentally gathered during the course of the present investigation, bearing on teacher characteristics as they are perceived and rated by students.

A total of 91 students, 46 from a televised and 45 from a lecture section of introductory psychology at the University of Texas, were administered a form requiring paired comparison responses to eight characteristics of teachers. This form is presented in Appendix . The basic format of the paired comparison procedure is to pair each of the eight characteristics with each of the seven other characteristics and ask that the student mark which one of each of the twenty-eight resulting pairs he regards as "more important." If a student, following this procedure, marked for example "makes me think" as more important than all other characteristics, his rating for this particular item would be 7. And if some other item were outranked by all seven items, its rating would be 0.

The mean ratings for the eight items for all 91 students are presented in Table III.E.4., with the items appearing in the order, from highest to lowest, in which they were ranked. The table also contains data comparing the ratings given these items by those students who at the time of the ratings (which was at the end of the semester before the final examination) were those students who, a week later, achieved A or B as a final grade in the course, as compared to the ratings by those students who achieved C or D. Also in the table are the data for the 46 students who were enrolled in a television section of the course compared with the data from the 45 students enrolled in a lecture section, given by the same instructor.

Unfortunately, it was not possible to relate these ratings to data concerning the students' attitudes toward televised instruction. But the data themselves and the instrument itself may still be worth reporting. While the case cannot be made that these eight characteristics are the most crucial ones, in the eyes of students or in the eyes of anyone else, of college teachers, one does expect that each of these characteristics is of some importance to some student, and that a comparison of their perceived relative importance may tell us a bit about the kind of relationship that students wish to establish with college professors.

By a fairly wide margin, the two leading items here were "clarity and organization in presentation," and, a close second, "makes me think." The liberal educator might well view with some despair the simultaneously high rating of these two points, for he might feel that these are contradictory hopes, and the student who wishes his professor to be clear and well organized really is wishing to have orderly notes easily learned without any painful cortical activity. Students may well entertain this hope and still report a more or less official and proper aspiration that their teachers will also make them think.

The next two items, very close to their over-all ratings, are "personal interest in students" and "fairness and clarity in grading." The ratings on personal interest in students, though still relatively high, are still not as high as one might expect after just having looked at the emphasis on personal relationships with students as it has shown itself in responses to questions about televised instruction. One is inclined to the view, in looking at the ratings of these four items, that the teacher who is most pleasing to undergraduate students is likely to be one who is so clear and well organized that they can follow his presentation easily and take notes upon it systematically, one who is fair in enacting and enforcing clear rules on grading, who takes enough personal interest in students to see that there is clarity, organization and fairness, and who also can make the students think they are thinking.

Such a dour interpretation can be translated into more objective kinds of hypotheses, each of which may deserve testing.

The other items in this array of eight teaching characteristics all fall far below the first four. With "high moral standards" and "personal charm and wit" falling at the bottom end of the rating scale.

The data on the differences between A and B students as compared to C and D students do not carry us very far toward enlightenment. There is only one difference here that is significant at the .05 level or better, and that is between A and B students with respect to the item "high moral standards". The C and D students rate this item significantly higher than do A and B students. Not much can be made of this difference. One is tempted to interpret this in the light of some kind of increased anxiety on the part of the students who are not making very good grades, an increased anxiety that makes them fear examinations, that makes them more concerned than A and B students with "fairness and clarity in grading", and makes them also more concerned with the conventional proprieties of this powerful individual who is going to be judging them.

This may represent considerable theoretical strain, however. Our data do not support it, but such an aspect of teacher-student relationships may deserve further exploration. One might build a picture of the anxious student, whether or not he is making good or poor grades, as one who is not particularly concerned with whether or not a course makes him think, who is concerned with clarity and organization of the teacher's presentation, who is very much concerned with fairness with respect to grading procedures, who does put considerable weight on the teacher's personal interest in students, who does not plan to enjoy the teacher's charm and wit or any other aspect of the course but who takes a fairly grim and frightened position with respect to the whole operation.

In the data on the differences in ratings between students in the TV sections and students in the lecture sections, with the same instructor doing the teaching in both instances, reveal only one statistically significant difference. That difference occurs with respect to the items "strict enough to make me work." It needs to be noted that these TV students did not at all necessarily choose to take the course by TV. The only clearly known difference between these TV students and these lecture students is that one had spent a semester, by the time he completed this form, under TV instruction while another had had lecture instruction, with both the TV presentations and the lecture presentations occurring during two hours of the week while the third hour was spent with a discussion leader in small groups. Hence one would clearly not expect there to be marked differences between students who happened to be assigned to a TV section and those who happened to be assigned to a lecture section. With respect to the significant difference that does occur, one might make a tenuous case that those who had survived a semester of televised instruction had had some experience in getting along without a domineering instructor present to "make them work" and hence had moved a bit toward independence from such an instructor. Again such an interpretation would perhaps represent a straining at gnats. But again the implied hypothesis may be worth both recording and eventual testing.

TABLE III.E.[illegible].

Student Rating of Teacher Characteristics

(Paired comparison procedure; high score = high rating)
N = 91 students, 46 from televised, 45 from lecture
section of Introductory Psychology

Rated Item	Mean All 91 Students	Mean 46 TV Students	Mean 45 Lecture Students	40 A & B Students	51 C & D Students
Clarity and Organization	5.65	5.69	5.57	5.75	5.54
Makes me think	5.34	5.26	5.40	5.55	5.15
Fairness and clarity in grading	3.74	3.67	3.80	3.50	3.92
Personal interest in individual student	3.70	3.69	3.72	3.67	3.75
Demanding high standards	2.98	2.95	3.02	3.07	2.92
Strict enough to make me work	2.42	2.02	2.84	2.40	2.45
High moral standards	2.02	2.28	1.77	1.50	2.45
Personal charm and wit	1.96	2.02	1.92	2.10	1.86

III.F. Student Reaction to Live and Televised Psychology Course.

In the Spring Semester of 1961 the instructor who had played the major role in preparing the psychology series for TEMP also presented the course in introductory psychology in a lecture section of approximately 240 students at the same hour that the televised division of the course was being presented in another building. (There were two TV presentations and two lectures per week.)

The lecture section of the class met at 10 o'clock on Mondays and Wednesdays ~~Fridays~~ in a large lecture room with a capacity of about twice the population of the class. The television sections met in three rooms in another building, with the largest of the of ~~the~~ three rooms having a capacity of 80 students, with about 20 students per television set. All sections of the class met twice a week, with the third hour handled in small groups by graduate students who served as teaching assistants in the course. These These teaching assistants also monitored the televised presentations. In the lecture section, the attempt was made to keep pace with the televised presentations. This turned out to be very difficult, for things somehow never can move quite as rapidly nor as efficiently in a live class as they can during the highly planned televised presentation of materials. Also, in spite of the attempt to duplicate all of the demonstrations that were presented in the televised series, some were impossible to arrange and others simply did not work as well as it was possible to make them work in the televised series. But according to many criteria, the lecture course and the televised course were very much the same, and All students were given identical examinations at the same time.

This arrangement of simultaneous live and televised courses by the same instructor, though occurring as something of a windfall, made it possible to conduct some comparative studies of students' reactions to the two forms of instruction. The fact that this arrangement suddenly became possible and was instituted only a week after the present principal investigator had become involved with the research project meant that there was a mad and sometimes not highly systematic rush to prepare materials in order to get students' reactions at the beginning of both of the groups. It was possible, however, to administer to both the lecture students and the TV students some fairly involved assessment forms during the first week of the semester. These forms, copies of which are presented in Appendix , included the usual solicitation of face data and quite an array of forms representing adaptations of the Osgood Semantic Differential Technique designed to get the students relatively subtle and complete reactions, at the beginning of the semester, to the concepts (1) "human beings", (2) "I, myself", (3) "psychology", (4) "psychology instruction by TV", (5) "psychologists", and to (6) "Dr. S____", the instructor. In format, these semantic differential forms followed the usual procedure of naming one of the above concepts at the top of the page and asking that the student respond to that concept by making appropriate marks on a number of bi-polar dimensions beneath it. For example, with respect to the concept, human beings, the student was to make a mark on a continuum extending from "simple" to "complicated" and on another continuum extending from "dull" to "bright", and so on, through 36 bi-polar concepts. The form did not confine itself to the concepts used by Osgood and his colleagues (Osgood, [illegible]) but was designed to explore into the workability of a wider variety of concepts and perhaps, for our purposes, of more appropriate discriminations.

A major hope in the use of these forms was that of finding a way, more subtle than most objective examinations, to measure the more intricate forms of learning that students may or may not do in class. With respect to the concept of "human beings", for example, the wish was to see whether or not students changed from the beginning to the end of the semester in the way in which they conceptually handled human beings. Our reasoning was that if the content of the course in psychology did make any kind of dent on the intellectual systems of the students, their concept of "human beings" would find itself, at the end of a semester, keeping different attitudinal and conceptual company, and that the semantic differential procedure might throw some light on the change in meaning. Also, we thought, relatedly, that there might be some change in the way in which the individual conceived of himself, hence the inclusion of the concept "I, myself", with a number of bi-polar scales for recording the responses to it. The purpose of including each of the other concepts seems obvious.

In addition to the semantic differential forms, other forms were administered to the students during the semester, in connection with one or another small project usually conducted by a student. At the end of the semester, the semantic differential forms, according to plan, were re-administered, and along with them were forms asking for the students to register their attitudes toward a number of aspects of the course, of the University, of teachers, and of some other things. In this array of attitudinal items, there occurred a ten-item version of the California F scale, a version deliberately arranged so as to avoid the debilitating effects of response set, and some items that could give a pretty clear indication of students' over-all attitude toward televised instruction as they conceived it or as they had experienced it. Also, at the terminal testing session, for both groups of students, a paired comparison form on teacher characteristics was administered (see p. [illegible] appendix

A number of analyses have been made of the data collected in the ways described above and will be reported in subsequent pages. Unfortunately, not all of these analyses were carried out with the greatest thoroughness or skill, for it was necessary that the work be done by students, some of whom had very limited experience in the conduct of research or in the analysis of data and were not able to avail themselves of adequate guidance. Also some of them, in connection with either undergraduate or graduate research courses bit off a good deal more than they could chew and eventually disappeared both from the project and from the University without completing their chosen tasks. These difficulties, supplemented by difficulties of rapid scheduling and budgetary deficiencies, and confounded by some serious health problems of two central members of the research staff, means that the analysis of these potentially useful data leave a good deal to be desired. However, a number of segments of the data have been analyzed and can be reported, perhaps with both utility and meaningfulness.

III.F.1. Grades in Televised and Lecture Sections.

Table III F 1 presents data on the mean grades on two hour exams and on the final exam for students in the lecture section and in the televised sections. As reported earlier, the students were administered identical objective examinations at the same time. By now it should be no surprise to anyone that there are no significant differences between the grades of students in the lecture section and the grades of students who took the course via television.

One might easily suspect, by accident of sampling or for some other reason, some difference in the grade performance between the students in these two sections, for it was not possible to match the students with respect to their general level of academic performance prior to taking the course. It could easily happen that the academically gifted student would be more likely to choose one kind of instruction over another, depending on the reputation of televised instruction on the campus involved. There is some evidence, as we will see, that some of the students who chose the television section did so with full knowledge of what they were doing, while a number simply wandered into the class without awareness of what was going to happen to them. There is no evidence that either section of the course had gained any kind of reputation that would have had a selective influence in recruiting either the academically gifted or the inept.

TABLE III.F.1.

STUDENT GRADES, LECTURE AND TELEVISED SECTIONS

	Mean, lecture		Mean, TV	
First hour exam	28.8	7.40	27.8	6.24
Second hour exam	35.6	6.48	33.1	5.09
Final Exam	119.6	21.21	118.4	26.88

The difference between TV and lecture students on the second hour examination approaches statistical significance. The other differences do not.

III.F.2. Reported Reasons for Taking Televised Psychology Course.

During the second week of the fall semester in 1962, 104 students in two televised sections of the introductory psychology course at the University of Texas were asked to complete a small form indicating the reasons they had enrolled in the televised course. The results of this small survey are presented in Table III.F.2. The data here seemed to indicate with considerable clarity that students do not stumble over themselves in rushing to enroll in televised sections. There is an indication, however, that some curiosity about televised instruction does in fact exist. The fact of its being televised seemed to determine for at least a few students the choice to enroll in a particular section of the course. In the decision to enroll in a particular section of a course, matters of convenience seemed to play a significant role. Of course not indicated in the table are other reasons that would be cited by students were they given an opportunity: many of them would report that the course was required for a major in a particular field or met some other form of academic requirement. Our interest here, however, was not why they would take psychology but why they would take a televised section of it rather than any one of several lecture sections also available.

Of direct relevance for this kind of consideration was the question asked of these 104 students at the same time they were given the chance to respond to the items in Table III.F.2. They were asked the following question: "What ideas did you have concerning educational television before you enrolled in this course?", and they were given a chance freely to record their answers. On the basis of a simple favorable-unfavorable code, 21 of our 104 students reported they had had unfavorable ideas

III.F.2. Reported Reasons for Taking Televised Psychology Course.

about televised instruction, while 15 reported that they had had optimistic or favorable ideas about it. Forty-six of the 104 reported that they had not thought about TV instruction, one way or the other. The 21 who report themselves to have had unfavorable feelings about televised instruction before enrolling in the course apparently found more compelling than these negative feelings the convenience of scheduling or the combination of matters of convenience and a desire to take the introductory course from the particular instructor involved in the televised presentations.

It might reasonably be expected that students' earlier experience with televised instruction would influence, one way or another, their decision to take another televised course. They were asked to report the number of other televised courses they had had. Eighty-eight of them had had none, while 16 had had at least one other experience with televised instruction. Certainly these 16 were not driven away from psychology because of the fact that it was televised. In this figure--which is 15% of the total enrollment in the two sections in question--is exactly the same as that for students in the lecture section.

It is a reasonable hypothesis that the ways in which the "word" runs across the campus concerning a particular course or pattern of courses would have an influence on whether or not students would volunteer to sign up for our televised course or feel happy with it once they were enrolled. That the reputation of television or the reputation of the particular course in question was not an appreciable factor as indicated by the fact that 72 of our 104 students had heard nothing about educational television, while 16 had heard favorable comments and a matching 16 had heard unfavorable comments. That the reputation of a course might be a factor in determining the enrollment it attracts, however, is indicated by the fact that of students taking the lecture section from the TV instructor, 29% reported that they had heard unfavorable comments about the television course as compared to the 15% for those actually enrolled in the TV course. While the hypothesis of dissonance reduction may be entertained here, particularly with respect to those who found themselves for one reason or another in the televised course, it is also reasonable that the reputation on the campus of any course has a good deal to do with the students' decision to enroll in it. Factors of sheer convenience, however, remain perhaps the most important determiner--other than general course requirements. Anyone wishing to do a thorough study of factors involved in either student or institutional orientation to educational television would need to examine with considerable care the "image" of television on a particular campus and to examine the factors contributing to the creation and maintenance of that image.

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TABLE III.D2.

STUDENTS' REPORTED REASONS FOR TAKING TELEVISED PSYCHOLOGY COURSES

Reasons for enrolling in this particular section	no. students checking
Someone suggested I take it	21
The only time I could take psychology	53
Thought it would be an easy course	0
Taught at a good hour for my schedule	27
Wanted to find out what educational TV was like	30
Thought I would learn a lot from a TV course	8
I just like TV	0
Others	11
Did not know it was a TV course	3
TOTAL	150*

*Total n was 104. Multiple checking was allowed.

Table III E 2

Reported Reasons for Taking Television Psychology Course

Students' ~~Early Reactions to TV Instruction in Psychology~~

Reason for ~~Taking~~ Enrolling in the Particular Section course	No. student checking
Someone suggested I take it	21
The only time I could take Psychology	53
Thought it would be an easy course	0
Taught at a good hour for my schedule	27
Wanted to find out what educational TV was like	30
Thought I would learn a lot from a TV course	8
I just like TV	0
Other	11
Did not know it was a TV course	3
	150*

*Total is over 100. Multiple checking was allowed.

III.F.3. Change in Attitude Toward Instructional Television After Exposure to Televised Presentations.

One of the smaller projects undertaken during that semester in which the same instructor was teaching introductory psychology in a large lecture section and simultaneously in a televised section involved a before-and-after rating of televised instruction on the part of students from the lecture section who had not formerly seen any of the televised presentations in psychology.

At the end of a morning lecture on sensation in a large Live section, any students who needed additional time as subjects in order to fulfill a course requirement, were invited to appear in the room, in another building, in which the televised course was regularly given. They were not told what they would be asked to do. In response to this request, a total of 25 students turned up at the appointed time in the evening and filled out the assessment forms supplied them. On another occasion, at the end of a lecture on perception, a similar invitation was given, again without telling the students the nature of what would be asked of them. On this occasion 42 students appeared to view the televised presentation on perception and to fill out the assessment forms to be described below.

In presenting both these lectures, the attempt was made to make the lectures as much as possible like the TV presentations; there was an attempt to use the same demonstrations as those occurring in the televised presentation and to cover the same verbal material and in very much the same way. It was the instructor's experience that in the lecture section he was not able to cover the material as fully as he could on the televised presentation but that all major points were hit upon and that approximately three fourths of the demonstrations used in the televised production were successfully employed in the lecture.

Of the 67 students who participated as observers in this project, 22 had had some televised instruction at the time they saw the psychology presentation, 45 had had no televised instruction. Approximately half of the students who came for the evening session reported that they had heard something about the televised psychology course, the other half reported that they had heard nothing. Of the 34 who reported that they had heard about the televised course in psychology, 10 reported that they had heard favorable comments, 21 reported unfavorable comments while 3 reported comments that were classified as neutral.

At the beginning of the evening session, the students were asked to complete a short form asking for some information about themselves and then to respond to a semantic differential form presenting to them an array of bi-polar scales bearing on the quality of instruction. In handling these ratings the students were asked to place a mark on a line, with the location of the mark representing their judgment about the relative superiority of television and lectures with respect to each of the variables involved. For each variable, they were given a line, divided in the middle, extending from the phrase "television better" at one end to "lecture better" at the other. They were to make a mark on the line extending between these two extremes that indicated their judgment or their relative position of television and lecture with respect to such variables as "over-all quality", or "humor". There were 19 concepts of this kind employed in the basic assessment scale. It was felt that the making of these judgments was sufficiently complicated and that the instrument itself sufficiently long that the students would not be able to remember at all precisely after 45 minutes of viewing television how they had filled out the assessment form to begin with.

After completing this form, the students were then given the 45-minute presentation, in one case the presentation on sensation, in another the presentation on perception. Table III.F.3. contains data bearing on the results of this before-and-after procedure.

The data contained in the first column of the table are the numbers of students who, in filling out the assessment form before viewing the psychology presentation, had rated TV as superior to the lecture method of presentation. The second column, to the right, gives the number who, *after* viewing one or the other of the televised presentations, had rated TV as superior to lecture and the third column, to the far right, contains the difference between the two ratings (the amount of shift toward a more favorable judgment of television's presentation).

The figures in the first column, giving the data on the perceived superiority of televised instruction before the viewing of the psychology presentation, gives an indication of the prevailing picture among this group of students of what television is like. We saw earlier that 24 of the students had had some exposure to television before coming to this demonstration; so there are represented in these data some effects, very probably, of actual experience. But there is the clear possibility also that the reputation of television, or a stereotyped picture of television, is affecting the results. In this column the figures rate TV highest for "completeness", "organization", "sophistication", "thoroughness of the teacher's preparation" and "clarity of basic points". Only two students out of our 67 think that television is likely to be superior whith respect to "humor", and only 6 think it is superior with respect to "personalness".

After viewing one or the other of our two televised presentations, students were asked to complete again the 19-scale semantic differential form. The result was a relatively pronounced shift toward a more favorable judgment of televised instruction. At the end of 45 minutes of viewing one presentation, something over half of our students were willing to rate televised instruction as superior to lecture instruction in terms of "over-all quality", "interest", the "citing of supporting evidence", "organization", "coherence", the "thoroughness of the teacher's preparation", the "likelihood of remembering content", and the "clarity of basic points." It is to be noted that on all of these points, television was regarded as relatively strong to begin with. The surprises perhaps come with respect to the first two items mentioned; there were very appreciable changes on these terminal ratings with respect to "over-all quality" and "interest". Also, there is a large change in rating on the matter of "likelihood of remembering content" where the number rating television superior changed from 14 to 33.

The third column gives in absolute terms the amount of change from before ratings to after ratings. The largest single changes occur with respect to the "citing of supporting evidence", and "the likelihood of remembering content", but there were appreciable changes on almost all the variables. The exception to this general trend come with respect to humor, where the number who thinks TV superior with respect to this variable jumps from two to only six. Also there appears to have been some disillusionment with the prior judgment that the TV teacher was more thoroughly prepared. The change here from before to after was in a minus direction, even though the majority of the students still agree that television is superior to lecture in this respect.

On the important matter of the perceived "personalness" of television instruction, there was a change from six at the beginning to fourteen at the end who judged television to be superior here. Even though this was not a large change, it does assume significant proportions when it is combined with the change from six to twenty-four students who regarded television as superior with respect to "students' felt involvement".

These data can best be taken to indicate the kinds of changes in attitude toward televised instruction that can be produced under some circumstances. We have seen evidence earlier that when there are actual comparisons made between televised and lecture presentation of material (Carpenter + Greenhill, 1958) the students are fairly often inclined to choose the televised presentation as the more satisfactory one. The present experiment, though not nearly as well designed as the earlier one, leads to an interpretation that is consonant with the earlier one. One is inclined to say that when students have actual experience with reasonably well done television instruction and when they compare this experience with the experience in a lecture section, they are likely to be more favorably inclined toward the television presentation. We of course could put more credence in our present comparative data had we taken the students who had seen the television first and then have them judge the lecture. This was not feasible.

TABLE III.N.1

CHANGE OF ATTITUDES TOWARD ITV AFTER EXPOSURE

Rated Attitude	Before Viewing, no. rating TV as superior to lecture	After viewing, no. rating TV as superior to lecture	No. shifting toward TV
Over-all quality	17	35	18
Interest	17	35	18
Completeness	33	51	18
Intelligibility	18	33	15
Holding attention	18	31	13
Sophistication	27	34	7
Cites supporting evidence	23	44	21
Organization	42	27 47	5
Personalness	6	14	8
Coherence	18	35	17
Humor	2	6	4
Teacher's interest in subject	4	17	13
Teacher's thoroughness of preparation	38	37	-1
Likelihood of remembering	14	35	21
Ease of paying attention	14	33	19
Relevance for understanding text	14	31	17
Clarity of basic points	19	37	18
Students felt involvement	6	24	18
Teacher's mastery of subject	11	19	8

Ratings of equal not included.

n = 67 students who had lectures on either sensation or perception in morning and who viewed television presentation on same topic in the evening.
Data based on semantic differential ratings before and after viewing the televised presentation.

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TABLE III.V.1

CHANGE OF ATTITUDES TOWARD ITV AFTER EXPOSURE

Rated Attitude	Before Viewing, no. rating TV as superior to lecture	After viewing, no. rating TV as superior to lecture	No. shifting toward TV
Over-all quality	17	35	18
Interest	17	35	18
Completeness	33	51	18
Intelligibility	18	33	15
Holding attention	18	31	13
Sophistication	27	34	7
Cites supporting evidence	23	44	21
Organization	42	27 47	5
Personalness	6	14	8
Coherence	18	35	17
Humor	2	6	4
Teacher's interest in subject	4	17	13
Teacher's thoroughness of preparation	38	37	-1
Likelihood of remembering	14	35	21
Ease of paying attention	14	33	19
Relevance for understanding text	14	31	17
Clarity of basic points	19	37	18
Students felt involvement	6	24	18
Teacher's mastery of subject	11	19	8

Ratings of equal not included.

n = 67 students who had lectures on either sensation or perception in morning and who viewed television presentation on same topic in the evening.
Data based on semantic differential ratings before and after viewing the televised presentation.

TABLE III.F.1

CHANGE OF ATTITUDES TOWARD ITV AFTER EXPOSURE

Rated Attitude	Before Viewing, no. rating TV as superior to lecture	After viewing, no. rating TV as superior to lecture	No. shifting toward TV
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Interest	17	35	18
Completeness	33	51	18
Intelligibility	18	33	15
Holding attention	18	31	13
Sophistication	27	34	7
Cites supporting evidence	23	44	21
Organization	42	27	5
Personalness	6	14	8
Coherence	18	35	17
Humor	2	6	4
Teacher's interest in subject	4	17	13
Teacher's thoroughness of preparation	38	37	-1
Likelihood of remembering	14	35	21
Ease of paying attention	14	33	19
Relevance for understanding text	14	31	17
Clarity of basic points	19	37	18
Students felt involvement	6	24	18
Teacher's mastery of subject	11	19	8

Ratings of equal not included.

n = 67 students who had lectures on either sensation or perception in morning and who viewed television presentation on same topic in the evening.

Data based on semantic differential ratings before and after viewing the televised presentation.

III.F.3-1. Additional Data on Student Assessment.

The small study described above yielded some additional data bearing on the way students assess televised instruction. At the end of the assessment form that was given after the students had viewed the televised presentation they were asked three questions similar to those occurring in earlier questionnaires on the assessment of televised instruction. In response to the question: "If a friend had a choice of taking Psychology 301 over TV or in a large lecture section, for which would you advise him to enroll?". Thirty-five students answered that they would advise the televised section, 32 answered that they would advise the lecture section. A second general question was as follows: "If a student were seriously interested in learning all he possibly could about psychology, do you think he'd learn more in the TV section or in the large lecture section?". To this question 42 of our students gave TV as an answer, 23 gave lecture. Obviously there is a perception on the part of these students that the televised presentation somehow had more substance than does the lecture presentation. The third question, similar to the second, was "If a student were mightily interested in psychology would he learn more in the TV section or in a large lecture section?". Here a slightly smaller proportion of our students favor TV: the figures are 38 for TV, 29 for lecture.

In response to all of these three questions, TV seems to fare better than it does when the student has no intimate experience upon which to base a comparison between televised instruction and lecture instruction. Again we must be hesitant to make too much of these results, however, for we do not have grounds for discounting the likelihood that the student preference for television, in the present small study, is not based on a factor of increased familiarity with the substantive content; after having heard a lecture in the morning on the same subject, the student may find that television has greater clarity and greater meaningfulness. We are unable to arrange the clarifying experiment in which the students who saw the television first were later exposed to a lecture in the same subject and were then required to make the same before-and-after assessments.

III. Students' Comparative Assessment of Televised and Lecture Sections of Introductory Psychology.

At the end of a semester in which the same instructor presented the introductory psychology course at the University of Texas both through televised presentation and in a large lecture section, all students in all sections were asked to fill out a form that presented questions pertaining to the quality and difficulty of the course, questions about plans for taking additional courses in psychology or for majoring in psychology, questions concerning the frequency with which they talked about the course, and questions concerning their reaction to their discussion leader (the individual who handled, in small groups, the discussion sections that met for the third hour during the week for both the large lecture section and the televised sections of the course. Of all the students in the lecture section, a sample of 45 students was matched, with respect to grades, sex and academic year, with a sample of 45 students in the TV section and their responses to the above questions were compared.

The first question on this assessment form was as follows: "*How do you feel that the introductory psychology course you have had would compare with similar courses at other universities around the country*? Do you feel that it was easier, or about equally difficult, or more difficult?" On the basis of a scoring of this item through the use of a 3 point scale, the mean for 45 TV students was 2.18, that for 45 lecture students 2.07. (The midpoint on the scale is, of course, 2; both means, thus were slightly on the "difficult" side of the mean.) The difference between the two groups was not statistically significant.

The second question was exactly the same as the first except that it asked the student to compare the present course with other courses *in terms of general quality*. Again scoring was handled on the basis of a 3-point scale and the mean for the 45 TV students was 2.20, the mean for lecture students 2.06. The difference was not statistically significant. Again both groups showed a slight inclination to judge the course as better than similar courses in other universities.

In response to the question "Do you plan to take additional courses in psychology?", 32% of the TV students said yes, while 25% of the lecture students said yes. Again, the difference was not a significant one.

In response to the question "What major have you chosen?", 7% of the TV students reported they had selected psychology, 4% of the lecture students reported they had selected psychology. The difference was not significant.

In response to the question "What do you think is your discussion leader's opinion of TV instruction?", the students were asked to check a point on the 5-point scale extending from very favorable, to mildly favorable, through neutral, to mildly unfavorable, to very unfavorable. On such a scale, with a high score indicating a less favorable reaction, the mean for the 45 TV students was 2.36, that for the lecture students 1.82. The difference was not a significant one. Both means tend in a generally favorable direction. Certainly we can say that neither the lecture or the television students felt that their discussion leaders were very hostile to televised instruction.

On a similar scale, students were asked to indicate their reaction to their discussion leader. The question was "In general, how do you like your discussion leader?". The TV students were somewhat less favorably disposed toward their discussion leader than were the lecture students, scoring a mean on this item of 2.07 while the lecture students scored a mean of 1.61. But again the difference was not a statistically significant one, and again both groups of students indicate that they have had a generally favorable experience with the course.

The final question on this assessment form dealt with the frequency with which the student reported that he "had talked with his friends about events occurring in class." Again the scale was a five point one, extending from "very often" to "never". The TV students and the lecture students scored exactly the same mean, 2.10. This means that both reported they talked fairly often—and equally often—with their friends about events in the psychology course.

All these present data on comparative assessment are clearly in line with the results of many studies comparing many aspects of televised and lecture instruction. The phrase "no significant difference" seems to be the pervasive descriptive one.

We perhaps need to remember in considering these results, and others like them, that the student in making his judgment, about the quality or the difficulty of the course and registering his favorable or unfavorable responses to it, either directly or indirectly, is behaving in an informational vacuum; he does not know what another course in this subject is like. We have seen that when there is a direct comparison between televised instruction and lecture instruction, students, under some circumstances, will be very much in favor of the televised presentation. But when they are asked simply to judge the quality or the difficulty of a given course, they are very probably responding to many aspects of the course. It is not now possible to separate out the relative magnitude of the contributions of the instructor, of the textbook, of the content of the course, of the hour in which the course meets or of any other aspect of the course that could easily influence the student's attitude toward it.

The data above can be used by those who wish to promote the use of television as the basis for positive assertions concerning the effectiveness of educational television. ITV, it can be said, does at least as well as a lecture course in interesting students in taking further courses in a subject and in persuading students to major in the field. And students who are exposed to televised presentations talk about these presentations just as much as they talk about events in a fairly well planned and relatively lively lecture section taught by an experienced and articulate instructor. If one wishes to lean in the other direction, he can make the statements that television does no better than a large lecture section on any count. It does not outscore the lecture procedures significantly in increasing students in the general field, in having them talk to their friends about events in the class, or in influencing their judgments concerning the difficulty or the quality of the course.

Of course if one wishes to face logistic reality in the viewing of data such as those presented above, he is almost forced into the position that under certain conditions, an adequately planned, skillfully produced and properly complete televised course can, on economic grounds, compete very successfully with the same course presented in ways that bring more faculty-student intimacy into the educational procedure but that obviously can require vastly larger amounts of faculty time.

III.F.5. Analysis, by Semantic Differential Technique, of Reaction to Televised and Lecture Courses in Psychology.

As mentioned earlier, there was an attempt in the present project to explore a bit into the possibility of using the semantic differential technique in getting information about relatively subtle changes in information or meaning or attitude when such changes may occur over a period of time or as such changes may be produced by the situations to which individuals are exposed. In the present project the students in both a large lecture section and in a number of televised sections of the introductory psychology course at the University of Texas were given, at the beginning of classes in February of 1961, forms (See Appendix   ) asking them to register their responses on a number of bi-polar scales referring to the key concepts of "human beings", "I, myself", "psychology", "psychologists", "psychology instruction by television", and "Dr. S____", the instructor. The forms contained 46 bipolar scales bearing on the basic concept of human beings, 30 scales bearing on "I, myself", 39 items bearing on psychology, 47 scales bearing on psychologists, 26 scales relating to "psychology instruction by TV", and 56 items referring to "Dr. S____", the instructor. The hope was that these data could be analysed to show any possible change from the beginning to the end of the semester in the students' attitudinal or conceptual reactions to the basic concepts of "human beings", and "I, myself" as these may have been produced by exposure to the content of the course. It was also hoped that this procedure would furnish relatively subtle indications of any change in attitude toward psychology, toward psychologists, toward psychology instruction by TV, or toward the instructor. Also, of course, there was the hope that it would be possible to compare any differences between students who took the course in the lecture section and the students who took the course in televised sections.

Unfortunately, it has not been possible to complete the analyses of all of the data made available through this application of the semantic differential procedure. Specimen segments of the data, however, have been analysed and can be reported.

For the analyses of these semantic differential data, the sample was one of 50 students, 25 of whom were chosen from the lecture section of the introductory course and 25 from the TV sections. The two groups of 25 were matched with respect to sex, grades, and academic year. A preliminary inspection of the data of these people indicated that there would be profit in the analysis of responses to the scales bearing on the concept "psychology instruction by TV." It seemed likely that the data from the scales bearing on this concept should not only give us a test of the procedure itself but would also give facts on the substantive statements concerning differential reactions on the part of lecture and television students.

An analysis of variance was performed on the February and June measures on all 26 scales bearing on "psychology instruction by TV." * This analysis yielded no difference between the February and June measurements; nor was there a simple difference between the lecture group of students and the television group of students. There was, however, a significant interaction between method of instruction and time (or trials).

*Dr. James Hawker supervised the handling of the data on this semantic differential aspect of the project.

This significant interaction is presented in Figure 1 and the data upon which Figure 1 is based are presented in Table III D.1. This interaction seems to be due to the decrease in positive attitudes from February to June on the part of the TV group of students. During this period the lecture students seemed to remain about the same in attitude toward the course.

To verify this significant interaction and to push the analysis in another direction, the data were also analyzed through the use of only those scales which earlier had been checked and found useful by Osgood and his associates and which have been demonstrated to tap basic factors in meaning. Hence, a second analysis of variance was made using only 10 scales. These 10 scales, and the Osgood factors under which they are conceived to fall, were as follows:

POTENCY

Difficulty-Easy
Shallow-Deep
Broad-Narrow

ACTIVITY

Active-Passive
New-Old
Formal-Informal
Cold-Warm

EVALUATIVE

Unpleasant-Pleasant
Poor-
Kind-Unkind

This second analysis of variance showed approximately the same results as the first except that the interaction here was more significant—beyond the .01 level of significance. Again there was no change with respect to either evaluation or potency or activity from February to June in the lecture sections. The television students, however, showed change on all factors with the greater changes occurring in terms of evaluation and potency. These data are represented graphically in Figure 2, and the quantitative basis for the graphic representation can be found in Table III.D.3-2.

A more detailed view of the data can be obtained in Figure 3. Here are represented responses on some specimen semantic differential scales and makes the data a little more concretely available. These data show that televised instruction tended to be viewed by those who were taking it, in comparison with those who are not, as relatively pleasant, relatively broad, relatively kind, relatively warm, and relatively informal. Though none of these particular differences is likely to reach statistical significance, when taken together they may indicate that the actual exposure to televised instruction is likely to break down some relatively unfavorable stereotypes concerning it. Students who have had exposure to it seem generally to judge it a little more favorably than those who have not, even though the student may not have had any opportunity to make a direct comparison of the two modes of instruction.

Further analyses of the semantic differential data are presented in the three sections of Figure 3. When the 14 scales are analysed in accordance with the three Osgood factors, there are no statistically significant differences or interactions with respect to the responses on "psychology", the responses on "psychologists", or the responses on "Dr. S____". Any differences that are even hinted at in the February data are irradicated in the June administration of the instruments. There is some indication that the television students start out the course with somewhat more optimistic regard for both psychologists and instruction by TV, but end up in June having very much the same profile on the semantic differential as do the lecture students. Some special attention may be due to the absence of any differences between television and lecture students, or between students in February and students in June, with respect to the concept of "Dr. S____," the instructor in both the television and lecture courses. To check on what seemed to be the clear absence of any significant differences or interactions here, an analysis of variance was run using all 56 of the scales on which the students recorded their reactions to "Dr. S____." An analysis of variance, the basic design and data of which are presented in Table III E 3-2, confirms the fact that there are no differences, either between groups or between periods in the students' reactions to the personal characteristics of the instructor. This finding may be interpreted, of course, to mean that the personality of the instructor comes across just as well or just as poorly in a television section as it does in a lecture situation. And it comes across relatively early in the course--during the first two or three meetings of the class. Perhaps any instructor who wishes his personality to be clearly perceived by students has as much chance of realising his aspiration as well through television as he does through face-to-face teaching in a lecture situation. Of course our data do not give us information on what cues students use in sizing up the personality of an instructor, but we do have support for the contention that whatever cues they use are there on the television screen just as much as they are there on the rostrum in the lecture hall. This fact, we are inclined to conclude, need have nothing to do with the students' positive or negative attitudes toward the two modes of instruction.

Table III D-3.1

"PSYCHOLOGY INSTRUCTION BY TV"

Design

Instruction		Subjects	Trials: Feb	Trials: June	
Instruction	TV	S_1 … S_{25}	3232 $\bar{x}$ =129.28	2979 $\bar{x}$ =119.16	6211
	Lecture	S_{26} … S_{50}	2907 $\bar{x}$ =116.28	2941 $\bar{x}$ =117.64	5848
			6139	5920	12059

SUMMARY TABLE

Source	ss	df	MS	F
Total	39944.19	99		
Instruction	1317.69	1	1317.69	2.46
Error (b)	29729.00	48	536.02	
Trials	479.61	1	479.61	3.03
I X T	823.69	1	823.69	5.21*
Error (w)	7594.09	48	158.21	

* < .05

Table III D-3.2

ANOVA

OSGOOD SCALES OF THE SEMANTIC DIFFERENTIAL CONCEPT "PSYCHOLOGY INSTRUCTION BY TV"

Design

			Trials		
			Feb	June	
Instruction	TV	S_1 … S_{25}	1178	1107	2285
	Lecture	S_{26} … S_{50}	1061	1087	2148
			2239	2194	

SUMMARY TABLE

Source	ss	df	MS	F
Total	4360.11	99		
Instruction	187.69	1	187.69	3.445
Error (b)	2614.92	48	54.48	
Trials	20.25	1	20.25	1.64
I X T	94.09	1	94.09	7.63 < .01
Error (w)	591.76	48	12.33	

Table VI D 3-

ANOVA
OSGOOD SCALES
# of the
SEMANTIC DIFFERENTIAL
CONCEPT
"PSYCHOLOGY INSTRUCTION BY TV"

DESIGN

TRIALS

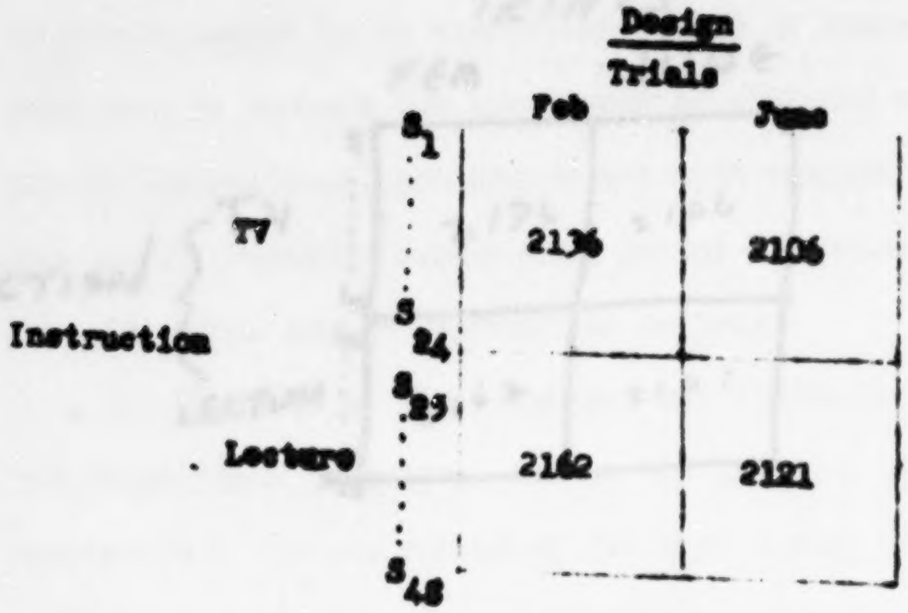
		FEB	JUNE	
INSTRUCTION	TV (S_1 … S_{25})	1178	1107	2285
	LECTURE (S_{26} … S_{50})	1061	1087	2148
		2239	2194	

SUMMARY TABLE

SOURCE	SS	df	MS	F
TOTAL	4360.11	99		
INSTRUCTION	187.69	1	187.69	3.445
Error (b)	2614.92	48	54.48	
TRIALS	20.25	1	20.25	1.64
I X T	94.09	1	94.09	7.63 <.01
Error (w)	591.76	48	12.33	

Table III D-3.~~8~~3

"Dr. SANFORD"


Design
Trials
Feb
June
S_1
S_{24}
S_{25}
S_{48}
TV
Instruction
Lecture
2136
2106
2162
2121

Instruction	Feb	June
TV (S_1 … S_{24})	2136	2106
Lecture (S_{25} … S_{48})	2162	2121

SUMMARY TABLE

Source	ss	df	MS	F
Total	7545.24	95		
Instruction	17.51	1	17.51	
Error (b)	5521.23	46	120.03	
Trials	52.50	1	52.50	1.24
I X T	1.27	1	1.27	
Error (w)	1952.73	46	42.45	

n = 48 students, 24 from lecture, 24 from TV section of introductory psychology.

~~Table~~ III D-3-2
ANOVA

"DR SANFORD" - semantic differential

DESIGN

INSTRUCTION		TRIALS	
		FEB	JUNE
	TV (S_1–S_{24})	2176	2106
	LECTURE (S_{25}–S_{48})	2162	2121

SUMMARY TABLE

SOURCE	SS	df	MS	F
TOTAL	7545.24	95		
INSTRUCTION	17.51	1	17.51	
Error(b)	5521.23	46	120.03	
TRIALS	52.50	1	52.50	1.24
I X T	1.27	1	1.27	
Error(w)	1952.73	46	42.45	

n = 48 Students, 24 from Lecture, 24 from TV section & interviewed only [illegible]

III.F.6. Summary.

During the conduct of the TEMP research project, it was possible to make arrangements in the state university so that televised and lecture sections in introductory psychology presented by the same instructor be given simultaneously to what appeared to be equivalent groups of students. A number of attempts were made to compare the two groups of students with respect to their attitudes toward instructional procedures and with respect to the results of their supposedly educative experiences during the semester. The results of these investigations may be reported as follows:

1. Students in the televised and in the lecture sections were administered two identifical hour exams during the semester and also an identical final examination. On the second of two hour exams, the lecture students scored somewhat higher than did the TV students and the difference approaches statistical significance but does not quite come up to the .05 level. On the first hour exam and on the final examination there were no significant differences between the two groups.

2. A study of the reasons students give for taking televised and lecture sections of the same course indicates that there was in 1961-62 some curiosity about television instruction on the campus and that some students sign up for the televised course to see what it was all about. Generally speaking, however, matters of timing, convenience, scheduling, and the reputation of the instructor seemed to have more general significance for the student's choice of a section than does the fact that the section is televised or not televised. This matter of ITV's reputation on the campus did not appear to have a highly significant bearing on the enrollment in the televised and lecture sections of the courses.

3. A total of 67 students who had been exposed in the lecture section of the course to presentations on sensation and on perception later saw televised presentations on the same topics. Both before and after exposure to the televised presentation the students were asked to complete relatively elaborate assessment forms upon which they recorded their general impressions of the relative quality of televised and lecture presentations. The results clearly indicate that an actual exposure to reasonably good televised presentations results in significant shifts in the judgments of the quality of televised instruction. On every dimension involved in the assessment the shift seemed to be toward a more favorable evaluation of televised presentation. The only exception to this was that the television teacher was less likely to be judged, after exposure to the TV presentation, as "more thoroughly prepared" than in the lecture section.

4. In the foregoing study, the matter of the perceived "personalness" of instruction received direct attention. Out of the 67 students, there was a change from 6 at the beginning of the hour to 14 at the end of the hour who judged television to be superior with respect to personalness. Also there was a shift from 6 to 24 students who regarded television as superior with respect to "student's felt involvement". These and the other data here can be taken to indicate the kind and extent of changes in students' attitudes that can be produced under some circumstances by actual exposure to televised presentations.

5. When the students involved in the foregoing study were asked if they would recommend TV or a large lecture section to a friend who was planning to take psychology, about half the students reported that they would advise the televised section. When asked the question "If the student were seriously interested in learning all he possibly could about psychology, do you think he would learn more in the TV section or the large lecture section?" appreciably

more than half of our students gave TV as an answer. In response to these questions and other foregoing ones, TV seems to fare appreciably better after an actual exposure to it than it does when students assess it in its absence.

6. On the basis of two samples of students from the two instructional groups, televised and lecture, additional comparisons can be made between the two modes of instruction. When asked how the "psychology course you have had would compare in difficulty with similar courses at other universities around the countyy?" both the television students and lecture students rated difficulty a little on the difficult side of neutral, but there was no significant difference between the two groups.

7. When asked a similar question about the general quality of the course they had just taken, the 45 TV students gave the course a slightly higher rating than did the 42 lecture students, but the difference did not quite reach a statistically significant level.

8. A larger proportion of the TV students reported that they planned to take additional courses in psychology, but the difference was not significant.

9. A slightly larger number of the TV students reported they selected psychology as a major, but the difference between TV and lecture students again was not significant.

10. All data so far reported in this section on the comparative assessment of lecture and TV presentation are clearly aligned with the results of many earlier studies. The phrase "no significant difference" seems to be the pervasive and descriptive one.

11. Analyses, through the use of the semantic differential procedure of attitudes of students in the lecture and in the televised sections revealed, for the most part, "no significant differences" between the two modes of presentation. There was evidence that students in the televised sections were likely to

decline a bit in their enthusiasm for televised instruction from the beginning to the end of the semester. This result may be accounted for by the likelihood that students who took the television course, a new experience for most of them, were unduly optimistic at the beginning of the course and hence had no way to change except downward.

12. Through the semantic differential analysis of students' responses to "Dr. S----", the instructor in both the televised and the lecture section of the course, there were revealed no differences between the televised and lecture sections of the course in attitudes toward or perceptions of the teacher. Also there were no significant changes over time in either group's perceptions of the instructor. This datum may be taken to mean that if the students are able to diagnose at all the personality of the instructor, they do so just as well when exposed to the instructor through television as they do when exposed to him in a large lecture section.

III.G. Personality Factors in Acceptance or Rejection of Televised Instruction.

There are numerous indications through the course of the present investigation that personality factors have a direct bearing, and perhaps a more direct bearing than any other kind of factor, on a student's acceptance or rejection of televised instruction. The general kind of formulation is one in which it seems necessary to think (a) about the general personality attribuest of the student as these lead him to desire certain kinds of relationships with an instructor, and b) about the ways in which these desired relationships are either facilitated or insulted by the televised mode of educational procedure. Our project did not succeed in defining or in discovering what are the most relevant personality factors. There are reported here, however, some data bearing on the general concern for personality factors in the student's orientation to educational procedures in general and televised instruction in particular.

III.G.1. Personality and Attitudinal Data on Psychology Students Who Like and Dislike Televised Instruction.

As reported earlier, during one spring semester the instructor who taped the televised course in introductory psychology also gave, at the same hour and in the same institution, a large lecture section of the same course. For research purposes, a sample of 34 students from the lecture section were matched, with respect to age, sex, and grades, with a sample of 34 students from the televised section. These two samples were compared in a number of ways. In the present analysis, leading to data presented in Table III.G.1., the group of 68 students were divided regardless of the section from which they came into those 34 most in favor of televised instruction, as indicated by scores on attitudinal items, and those least in favor of televised instruction. Then the responses of two groups of 34 each were compared in their responses to each of the items on the attitudinal questionnaire.

Table III.G.1. presents the mean score, calculated as in the case of other scoring using the highly disagree-highly agree continuum and the 6-point scale on each of the items. Also contained in the table at the right hand side are the mean scores for those 34 students who are relatively in favor of TV as compared to the mean scores of the 34 who are relatively opposed to TV. (The two groups were separated on the basis of the mean score on the three questionnaire items having the clearest positive-negative orientation.) The 34 students who are relatively in favor of TV differ significantly, at the .05 level or better, from the 34 students who dislike TV on 16 of the 75 items. These items are circled in the left-hand margin of Table III.G.1.

There is no point here in attempting to "psychologize" these differences. They do exist and they may be taken as evidence that personal psychological attributes of students do have something to do with their attitude toward

TABLE III.G.1.

Attitudinal and Personality Differences between
Students who like ITV and Students who dislike it

N = 68, including 34 students from a lecture section and 34 from a televised section of Introductory Psychology
Means for 68 given in pencil.
Means for 34 who most dislike TV given in black ink.
Means for 34 who most like TV given in blue ink.
Circles on left indicate items where differences between 34 pro TV and 34 anti-TV students are significant at or better than the .05 level.

N – [illegible] students ~~in Pencil~~

Dependents 2 groups [illegible] items 61, 62–72

N = 68
34 pro
34 con

HA – Highly agree
A – Agree
SA – Slightly Agree
SD – Slightly Disagree
D – Disagree
HD – Highly Disagree

[illegible] = [illegible]

Means [illegible]
[illegible] = Black
[illegible] = Pro

1. Obedience and respect for authority are the most important virtues children should learn. — 1 2 3 4.30 HA A SA SD D HD {4.12 / 4.47}

2. Every person should have complete faith in some supernatural power whose decisions he obeys without question. — 3.88 HA A SA SD D HD {3.94 / 3.82}

③ What the youth needs most is strict discipline, rugged determination, and the will to work and fight for family and country. — 3.69 HA A SA SD D HD {3.44 / 3.94}

④ People tend to place too much emphasis on respect for authority. — 3.74 HA A SA SD D HD {3.38 / 4.09}

5. It may well be that children who talk back to their parents actually respect them more in the long run. — 4.37 HA A SA SD D HD {4.24 / 4.50}

⑥ I seldom have any enthusiasm for respect and obedience for authority. — 4.94 HA, A SA, SD, D HD {4.76 / 5.12}

306 n = 3 + [illegible]
3 ∪ [illegible] TV
[illegible] 61, 62
70

Code Name: ______________________

Mock = PrwTV

7. It would be preferable if there were less enthusiasm about strict discipline, rugged determination, and the will to work and fight for family and country.

4.47
HA A SA SD | D HD {4.41 4.53

8. I would not myself consider patriotism and loyalty to be the first requirement of a good citizen.

4.32
HA A SA SD | D HD {3.85 4.59

9. Nowadays when so many different kinds of people move around and mix together so much, a person has to protect himself especially carefully against catching an infection or a disease from them.

2.49
HA A | SA SD D HD {2.50 2.47

10. No sane, normal, decent person could ever think of hurting a close friend or relative.

3.24
HA A SA | SD D HD {2.94 3.53

11. A good teacher needs to be sufficiently strong to demand the respect of his students and to maintain discipline in class.

4.62
HA A SA SD | D HD {4.62 4.62

12. Since a student is judged primarily by the grades he makes it is a matter of first importance that a teacher be very fair in giving grades.

4.97
HA A SA SD | D HD {4.82 5.12

13. It is unfair of a teacher to ask on an examination questions that he has not covered in class.

4.09
HA A SA SD | D HD {3.70 4.47

14. It is unfair of a teacher to turn over the giving of grades to assistants. He should do it himself.

4.54
HA A SA SD | D HD {4.26 4.62
.56

15. No one should enter the college teaching profession unless he is the kind of person who can serve as a social and moral example for young people.

4.37
HA A SA SD | D HD 4.24 4.59

16. The personal habits and personal appearance of a teacher should be unimportant so long as he can help students toward intellectual growth.

3.77
HA A SA | SD D HD 3.91 3.62

17. The good teacher should be thoroughly familiar with each of his students so that he knows the best way to make each of them pay attention in class.

3.77
HA A SA | SD D HD 3.94 3.59

18. The professor who can't make every student stay awake in class has no place in college teaching.

2.49
HA A | SA SD D HD 2.56 2.41

19. The college teacher should know his subject sufficiently well that he can give a definite, authoritative answer to any question a student asks him.

4.18
HA A SA SD | D HD 3.85 4.50

306 M – [illegible]

Code Name: [illegible] 307

20. The good college teacher is the one who teaches problems rather than answers. 3.26 HA A SA | SD D HD 3.3 3.18

21. The trouble with many college teachers is that they don't give students clear-cut answers on important questions. 3.75 HA A SA | SD D HD 3.59 3.41

22. The student who wants clear and authoritative answers to all questions does not belong in a liberal arts curriculum. 3.59 HA A SA | SD D HD 3.50 3.68

23. The best college courses are those in which the teacher spends most of his time explaining difficult points in the textbook. 4.06 HA A SA SD | D HD 4.2 3.88

24. The best college course is one in which the teacher uses his own knowledge to supplement the material in the text. 4.82 ✓ HA A SA SD | D HD 4.41 4.74

25. A student can generally learn more from his textbook than from his professor's lecture. 3.72 ✓ HA A SA | SD D HD 3.82 3.62

26. It is generally very exciting to hear a teacher talk about his own research. 4.65 HA A SA SD | D HD 4.65 4.59

27. The teacher should not take up time in class talking about his own interests but should work as best he can to help students understand the text. 3.24 HA A SA | SD D HD 3.00 3.47

28. When it comes to giving grades the teacher should take into account not only the student's performance on the examination but also the student's personal needs. 3.62 ✓ HA A SA | SD D HD 3.59 3.64

29. The teacher who knows a lot about undergraduate life on the campus will probably be better at getting ideas across in class. 2.32 HA A | SA SD D HD 2.32 2.12

30. Generally speaking, the teacher who has a sense of humor will be much better at getting ideas across in class. 1.98 HA | A SA SD D HD 1.82 2.14

31. It is pleasant if a teacher has a sense of humor but humor doesn't often really help students understand better the teacher's points. 3.65 HA A SA | SD D HD 3.65 3.65

32. It is better if weak and indecisive people, however brilliant they may be, do not teach college classes. 4.28 HA A SA SD | D HD 4.29 4.26

33. Students will learn more if they are at least a little afraid of the teacher; a bit of fear will make them attend class regularly and stay awake. 3.56 HA A SA | SD D HD 3.52 3.56

Code Name: [illegible] 34 [illegible]

3rd $\overline{M}$

34. The teacher's ideas, however brilliant they may be, are useless unless he can put them together in an orderly lecture.
5.02
HA A SA SD D| HD 4.95
5.18

35. Since many college students really don't want to work hard in college, we need teachers who can make students work and learn whether they want to or not.
3.36
HA A SA| SD D HD 3.24
3.32

36. A great fault with many university teachers is that they treat their students as if they were children, incapable of independent work.
4.27
HA A SA SD| D HD 4.24
4.24

37. A great fault with many university teachers is that they expect too much independent work from the students.
3.99
HA A SA| SD D HD 3.76
3.82

38. The best college education is one that prepares the student for a job.
3.39
HA A SA| SD D HD 3.47
3.71

39. The best college education is one that helps a student learn to make a life rather than a living.
2.40
HA A| SA SD D HD 2.44
2.35

40. The best teacher is one who helps the students see how the subject can be applied later in practical affairs.
2.27
HA A| SA SD D HD 2.32
2.24

40. The worst teacher is one who is so concerned with practical applications that he fails to teach his subject for its own sake.
3.41
HA A SA| SD D HD 3.44
3.38

41. The best method of teaching college students is to have expert teachers give authoritative, well-organized lectures.
4.06
HA A SA SD| D HD 4.06
4.06

42. The best method of teaching college students is to have small groups of students participate in free give-and-take seminars with their professors.
2.90
HA A |SA SD D HD 2.97
2.82

44. The university would be better off if it had on its teaching staff only those who were not only good teachers but also good citizens, good parents, and good church members.
3.98
HA A SA |SD D HD 3.68
3.58

45. Objective examinations are undesirable because they remove the personalness from the grading of papers.
4.30
HA A SA SD/ D HD 4.41
4.18

46. Essay examinations are better than objective examinations because they allow the teacher to know the student's personality as well as his knowledge.
3.59
HA A SA| SD D HD 3.51
3.64

47. A final examination is generally a terrifying experience for me.
3.18
HA A SA| SD D HD 3.24
3.12

Code Name: 309

Roo = Occ. 3✓ conT✓
M
Mode = 3✓ - ProT✓
Item 61, 62 & 40

48. The courses that have influenced me most are those in which the teacher had enthusiasm, charm and wit, as well as a knowledge of his subject. 1.99 HA | A SA SD D HD [illegible] 1.79 2.18

49. I admire a teacher who can make me work even when I don't really want to. 4.94 HA A SA SD | D HD [illegible] 4.97 4.41

50. Freshmen and sophomores should be required to attend class. 3.68 HA A SA | SD D HD [illegible] 3.79 3.47

51. If the university requires attendance at classes it is treating students as children. 3.63 HA A SA | SD D HD [illegible] 3.47 3.74

52. A student is likely to get the most out of college if he is treated as an independent individual able to take responsibility for seeking his own education. 2.41 HA A | SA SD D HD [illegible] 2.38

53. A student is likely to get most out of college if he is treated with a firm hand, is made to attend class and is punished when he fails to meet high standards. 2.50 HA A | SA SD D HD 2.53 2.47

(54.) A prime requirement for a college teacher is that he be able to maintain discipline in class. * 3.94 HA A SA | SD D HD 3.56 4.32

55. A college teacher should not have to concern himself with discipline; after all he is dealing with supposedly civilised adults. 2.47 HA A | SA SD D HD 2.38 2.56

56. I prefer a teacher who is the obvious master of both his subject matter and of his students. 4.46 HA A SA SD | D HD 4.35 4.56

57. Unless I am a little afraid of a teacher, I can't pay close attention in class. 2.44 HA A | SA SD D HD 2.38 2.50

(58.) I would like to visit some of my professors in their homes. * 2.62 HA A | SA SD D HD 2.32 2.91

59. The best teacher is one who meets very high standards and sees that his students meet them. 3.98 HA A SA | SD D HD 4.41 3.55

60. When you get down to the grim realities, getting a college degree is largely a matter of "beating the system" of finding how the professors conduct exams and how to give them the answers they want. 3.47 HA A SA | SD D HD 3.[illegible] 3.[illegible]

61. I strongly dislike teachers who will not give their students a clear understanding as to just what material will be covered on exams and just what form the examination will take. 4.27 HA A SA SD | D HD 4.06 4.47

Items 61-70 [illegible] Item TV Items [illegible] 310 [illegible] [illegible] Items 61, 62, 63

Code Name: [illegible] [illegible]

61. TV instruction might be good for some students but as for me, I am strongly opposed to it. ? HA A SA | SD D HD 3.19 [illegible] 3.04

62. Given a choice between taking the same course from the same instructor on TV or in a large lecture class, I'd choose the TV. 2 HA A SA | SD D HD 1.06 3.93 3.09 2.91 4.44

63. Instruction by TV is especially bad because students should have personal contact with the teacher who will be giving the exam. HA A SA | SD D HD 3.61 3.29 4.32

64. TV instruction is especially poor in that students should have a teacher in class with them to make them pay attention. HA A | SA SD D HD 2.69 2.59 2.79

65. TV instruction is likely to be better than live instruction because TV instructors are probably better prepared to present their material. HA A SA | SD D HD 3.65 3.00 4.29

66. Instruction on TV is likely to be better than live instruction because the serious student has fewer distractions in TV class than in other classes. HA A SA | SD D HD 3.82 3.29 4.55

67. TV instruction is likely to be poor because the TV instructor can't know anything about the personal problems of his students. HA A SA SD D HD 3.44 3.97

68. TV instruction represents the University's attempt to save money on teaching staff. HA A SA SD D HD 2.97 3.03

69. TV instruction is objectionable in that the student can't learn much about the personal characteristics of the instructor. HA A SA | SD D HD 3.49 3.18 3.79

70. Although some students may dislike TV instruction, I myself think it a fine idea. HA A SA | SD D HD 3.46 2.57 4.35

71. Since it is important in a democracy that every intelligent person receive a good education, it is up to college teachers to see to it that every student in class pays attention and learns all he can. HA A SA | SD D HD 3.11 2.94 3.24

72. Since many students will miss class unless there is some pressure to attend, teachers should require attendance at class. HA A SA | SD D HD 3.28 3.32 3.24

73. The most important thing a college education can do is to prepare an individual for a vocation. HA A SA | SD D HD 3.49 3.67 3.55

74. Serious students probably don't much care about the personal traits of a teacher so long as they find him intellectually stimulating. HA A | SA SD D HD 2.85 2.76 2.91

Note to HP: Something is fishy with respect to Item 62. Seems to be reverse scored.

III.G.2. Openness to Communication and Orientation to Televised Instruction

Another approach to the study of personality factors that may contribute to the student's positive or negative attitudes toward televised instruction was that forwarded by John McCoy, in connection with an undergraduate research project, in which he administered to a group of 257 undergraduate students in psychology and in other courses, the 10-item balanced authoritarianism scale, reported earlier, a 100-items scale tentatively labeled "communication scale", and 15 items soliciting attitudes toward instructional television. The instrument used in this study is presented as Appendix .

The analysis of data from this study is by no means complete, but there are some indications in it that seem worth reporting if for no other purpose than to indicate the likelihood that subtle personality factors are related to the student's attitudinal stance with respect to educational television.

For example, the 100 item "communication scale", a scale having an odd-even reliability of .89 and apparently measuring an individual's general openness to a willingness to receive communication and interaction, correlates significantly with total score on the 15 items constituting a potential TV scale. The correlation here was +.30, a figure that is significant at the better than .001 level. Thus it appears, at a tentative level at least, that students who seem open to verbal experience, to varied conceptual input, are favorably inclined to educational TV.

At a more concrete level, there are meaningful correlations also between the total score on the "communication scale" and the answers to specific items concerning educational TV. For example, the responses to the item "I feel that I could learn satisfactorily in a course taught by TV correlate .33 (significant at the .001 level) with the total score on the "communication scale".

McCoy has also found correlations between attitudes toward TV and other personality tests, some of which are still of an experimental sort. For example, the Byrne Repression-Sensitization scale (   ) correlates -.36 with the item "If I had a choice of a course taught by TV and the same course taught by a live instructor, I would choose TV instruction". Thus those subjects characterized by Byrne as high in repression--and he uses this term in a somewhat unusual manner-would be relatively in favor of TV as compared to those who are high in sensitization. Answers to this same TV item also have meaningful correlations to some word association tests and other experimental tests being developed in the department of psychology at the University of Texas. Data from this study are being further analysed.

IV. CONCLUDING STATEMENT.

There seems to be little or no point in trying to summarise the various summaries that have already been included in the foregoing sections of the present report. If one wished to, he might go back and pull out the empirically sound and statistically significant factual relationships that have been turned up. There are a number of these, in spite of the fact that the study was not designed for the precise testing of clearly defined and carefully stated hypotheses. One might also go back through the various summaries and through selected materials upon which the summaries are based and collect for tabulation here quite an array of hypotheses bearing on the educational process and on the particular place of televised instruction therein. It is in the creation of these hypotheses that the present study took its greatest interest and perhaps has made its greatest contribution, if any.

The principal investigator in the study is left with two overriding convictions concerning the nature of the central problem in research of this kind and the most productive strategies for attacking such problems. With respect to the central problem, there is abundant evidence to indicate it to be one of defining and dealing meaningfully with the criteria of educational progress. We obviously will not be able to make maximally meaningful assessments of any mode of instruction or any pedagogical invention or of any individual teacher or of the intellectual growth of any individual student until we find better ways of defining and of measuring what it is in students we wish to see change through educative experiences. It is clearly obvious that the utility of objective examinations in this respect is sadly limited. In our present study the attempts to use the semantic differential procedure to assess intellectual changes over a semester showed some promise but, by conventional analyses of semantic differential data, yielded little that is of utility. It still remains a promising procedure, however, in trying to find out if the conceptual company kept by key and significant ideas does change with the progress of education.

A second general conviction has it that productive research in the area of higher education needs to focus on those general traits of the whole individual that can be defined, that can be measured, and that have an obvious bearing on the general intellectual functioning of the individual. There must be new explorations into more cognitively defined personality traits if we are to have indices of educational progress, and if we are to use such indices to measure the relative effectiveness of existing educational procedures. Along this line, one thinks of such variables as one that might be described as the "scope of the psychological world" of the individual. In addition one thinks of a test to measure the student's capacity for self reinforcement. One thinks of a definition and a test of a variable involving the student's capacity to enjoy the processes as well as the goals of educational experience. One thinks of a test that defines and measures the student's sense of individual style. There seems to be no inexorable reason why such variables may not be defined and may not be, through sound and sanitary psychometric procedures, subjected to relatively subtle measurement. When these things come to pass then we can investigate the relative effectiveness of televised and lecture instruction and then we can determine whether or not a given teacher is more effective than another. Then we can explore the various dimensions of the teacher-student relationship and can examine the contribution of certain kinds of relationships to certain kinds of changes in significant personality variables. Until we have some solution in the area of criteria, research explorations of education at the college and university level are going to be less fruitful than they need to be.

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